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## FOREWORD

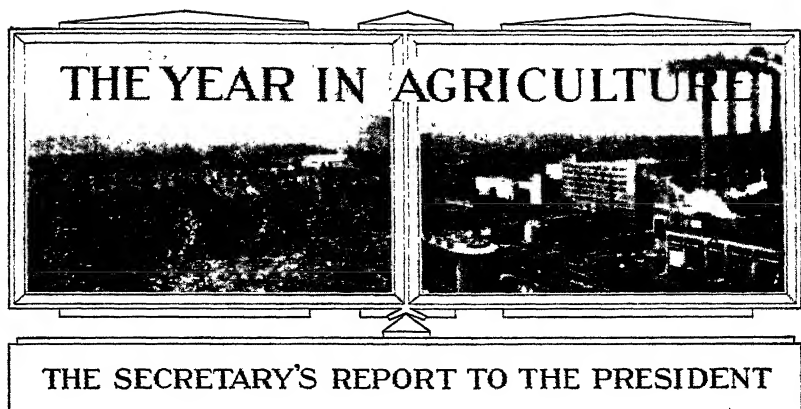
AS WE move toward economic and social cooperation, we need more science. Extensive cooperation of that kind, as in the farm adjustment programs, cannot be developed through trial and error alone. That would be inviting failure. In our pioneer period and for long afterward, the trial and error process worked. It produced mistakes, but the mistakes did not drag down whole communities. Now things are different. With public agencies making decisions in farm production, land settlement, land use, etc., blind experimentation more and more must give place to knowledge. Though science cannot eliminate the risks, it can lessen them. Moreover, we need more science of special kinds. All science has social value. But the application varies with social conditions. Sometimes we need mostly technology or production-science. Again we may chiefly want to know about the *distribution* of wealth. Production-science is useless if goods cannot be distributed. It is important just now to study marketing, consumption, debt, the rural-urban balance, international trade, population movements, and money matters. These problems are primary. Unless we can solve them, we shall fail eventually to solve even minor questions. The United States Department of Agriculture is devoting much attention to such studies in a research program shaped by the pressure of national wants. In its long experience, the Department has learned how to attract into its service, how to retain, and how to encourage able investigators. There is really only one rule; namely, that scientific men shall be allowed to follow the truth. Science cannot be blue printed and pushed forward on a schedule. Often scientists should be under no obligation to produce immediate results. Sometimes, on the other hand, they must answer emergency calls. The great thing, in directing science, is not to regiment it; for that would be to kill it. We combine organization with freedom in our political life. We are trying to do the same in the economic sphere. There is an identical problem in science. Organization is necessary in this field too. Modern science is cooperative. Scientific men cannot work in isolation without funds, equipment, and communication with fellow workers. But the organization of research, particularly in studies that affect economic interests, is difficult. It tempts us to *anticipate* findings. This temptation we must resist. Otherwise the research is spurious and the research morale declines. Science is either free or dead. In organizing research we must not destroy its nature and leave only a mechanism. How to organize research without regimenting the research personnel is a problem that needs further study. From the organization to the regimentation of science, the descent is easy. It is imperative to avoid this calamity. The principal thing that distinguishes the progressive from the decadent countries is mental freedom; and in science this quality is indispensable. As scientific people enter the public service in increasing numbers, in economic and social engineering, we should create the conditions necessary to sound work. I believe, that the United States Department of Agriculture is doing its best to do this. Readers will observe that the consensus among specialists in the subject does not exclude individual opinion and individual findings. The Department does not impress a dead uniformity on the writings of its scientific staff. It encourages freedom of expression, as well as freedom of inquiry. Better a difference of opinion within the family than an imposed and therefore worthless unanimity. This volume indicates that science can be organized without ceasing to thrive.

HENRY A. WALLACE,  
Secretary of Agriculture.

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WASHINGTON, D. C., *December 12, 1934.*

To the PRESIDENT:

### TOWARD A BALANCED ABUNDANCE

Experiments of interest and concern to the public usually meet with objections from opposite poles. Some people say the experiments will not work, and others that they will work too well. It was said of Stevenson's locomotive that it would not run and that it would run too fast. It was said of the Agricultural Adjustment Act that it would not control production and that it would control production to the point of scarcity. Two seasons of trial have disposed of the first objection. Everyone now recognizes that in the combination of benefit payments and processing taxes agriculture has an effective means of adjusting its production to the needs of the market, a method which overcomes the obstacles that wrecked all previous efforts to accomplish that end. This new method rewards principally those who take part in production adjustments. Previous methods had exactly the opposite result. They benefited outsiders and forced insiders to pay the costs. So successful has the new method proved, that we hear louder than ever the objection that it will work too well for the good of the community, that it creates want and not welfare.

This objection has no better foundation than the one it supplanted. In proof we need simply to review the action taken and the results achieved up to the present; for the story shows why the Agricultural Adjustment Act succeeds in adjusting production to the demand and why it would not succeed were it used to reduce production below that point. Naturally the first steps involved reducing production. In 1933 agriculture had enormous surpluses of wheat, cotton, tobacco, and hog products, which had accumulated as a result of wartime expansion, economic nationalism, strangled foreign trade, the disappearance of foreign markets, and reduced domestic consumption. Prices had fallen far below costs. Merely to avert farm ruin, it was imperative to eliminate the surpluses. As matters then stood, production control seemed to be synonymous with crop reduction. But it was never contemplated that reduction, once started, should be

continued indefinitely. The adjustment principle applies not only on the downturn; it may regulate production to a stable or to a rising demand, and may maintain a good balance among farm enterprises. After lessening the bad effects of past mistakes, it may help to prevent new mistakes. It would be a serious mistake to reduce farm production constantly. Such a course would raise prices temporarily, but would restrict consumption, and create new farm competition at home and abroad.

### End of Emergency Adjustments in View

As a matter of fact the end of our period of emergency adjustments, of drastic reductions in the farm output, is coming into view. In the case of some commodities, such as wheat, corn, and hog products, the domestic surpluses have largely disappeared, as a result partly of crop control and partly of weather conditions. As we advance in the adjustment of supply to existing demands, the basic principle of the Agricultural Adjustment Act stands out more clearly. It is production adjustment, which does not mean reducing the production of everything, but producing different commodities in the proper amounts and proportions. Sometimes we need reduction, sometimes expansion. As markets improve, farmers must be ready to increase their output. In doing so, however, they must keep step with the growth of demand and not run ahead of it. They must be on guard against piling up new surpluses. Cooperative action as prescribed in the Agricultural Adjustment Act affords the means.

Adjusting production downward when demand falls is not new. It is the normal, and in fact, the compulsory course. Industry follows it more generally and more successfully than does agriculture. Manufacturers immediately check or cease production when they can no longer sell their goods. They do so largely at the expense of labor, which loses its employment. Agriculture cannot quickly readjust its production downward for reasons familiar to everyone. Disused farms suffer more than disused factories. Planting and livestock breeding are annual matters; factory production can be adjusted almost from day to day. Also, farmers acting individually work at cross purposes. And then, too, when prices fall, some farmers try to recoup by having more bushels or bales or head of livestock to sell. Cooperative planning under Federal guidance can in part overcome these difficulties. It provides a definite mechanism through which farmers can work together for the control of production. Even with this assistance, however, farmers cannot regulate their output as accurately as can manufacturers. Agriculture cannot create scarcity at will, because the motive to keep men and land out of production weakens as surpluses disappear.

### Need of Permanent Control

Essentially, agriculture needs production control to prevent the mass swings that lead to recurring cycles of over and under production. Adopted as an emergency device, a means for averting irremediable disaster through quick, concerted reduction of output, the

control principle has nevertheless permanent as well as emergency uses. This we can infer from a glance at the conditions that existed in agriculture long before the present depression. Both before and after the war, recurring cycles in production blocked steady farm prosperity. Adjustment to demand through blind competition caused farmers to rush in and out of different enterprises. Whenever any crop showed a profit, the producers grew more until the profit had been stamped into the ground. They did so to the greatest extent during and after the war; but under so-called free competition they always do so to some degree. Cooperative adjustments offer a means of correcting this normal handicap, as well as of dealing with abnormal surpluses. This use of the adjustment principle is the natural sequel to the emergency adjustments.

We can see the need by glancing at the record of some past production cycles. Thus the hog cycle carried hog slaughter from 62,000,000 in 1920 up to 80,000,000 in 1923, and then down to 66,000,000 in 1926. In the meantime hog prices varied from below \$7 a hundred pounds in 1923 to \$14 in 1926. The beef cycle carried cattle slaughter from 12,000,000 in 1921 to 15,000,000 in 1926 and then down to 12,000,000 again in 1928. Steer prices increased from \$9.20 a hundred pounds in 1926 to \$15 in 1928. A new upward movement in cattle numbers accounts partly for the low cattle prices of recent years. Wide swings in potato production caused prices to fluctuate widely. Between 1926 and 1928 the production increased from 323,000,000 to 427,000,000 bushels and the farm price per bushel declined from \$1.42 to 62 cents. Great swings in cotton acreage were common. From 1922 to 1926 the cotton acreage jumped from 34,000,000 to nearly 49,000,000. The farm prices for cotton varied from 23 cents to 12½ cents a pound in 1926—a very low price for that time. Many other products showed similar fluctuations in production and prices.

Farming would return to these erratic and senseless swings if we dropped the principle of cooperative adjustment. The swings due to weather are wide enough without having them further complicated by human miscalculation. Without means of coordinating their production, farmers could not for long keep a satisfactory balance between production and consumption. They can do so with the machinery provided in the Agricultural Adjustment Act with no risk that production control will lead to monopoly. There are two very strong safeguards: (1) The natural desire of farmers to take advantage of real opportunities for profit; (2) the fact that supply is only one of the factors that determine price. Demand is equally potent. This is particularly true of dairy products, fresh fruit and vegetables, and meats. Cotton prices vary with demand about as much as with supply. In the case of wheat, potatoes, and rice, supply seems to be the dominating price-making factor. But even in the case of these commodities there is a limit to the extent to which farm income can be influenced through supply adjustments. Farm income depends vitally on consumer buying power, and gains hereafter will depend increasingly on industrial recovery. Agriculture cannot achieve prosperity by itself. Such measures as the housing act, the bankruptcy measure to scale down impossibly heavy debts, the Reconstruction Finance Corporation's loans to industries, and recent changes in the N. R. A. price policies are very important to farmers.



### Fair Adjustment Retains Consumer's Good Will

That farm recovery depends essentially on adjusting production to market needs rather than always on cutting it down appears in other ways. Removing surpluses benefits both producers and consumers. It restores fair exchange value to farm products and enables farmers to buy nonfarm goods. Consumers gain nothing in the long run by getting farm goods at less than cost. In one form or another they have to pay the full bill eventually. Agriculture must be maintained; and to maintain it the prices paid for farm products must cover the costs. Consumers do not escape this necessity by not paying the necessary prices immediately. They simply postpone the payment to their disadvantage. What they save on current prices they have to make up in the future. This is so generally recognized that public opinion almost unanimously approves reducing production to remove surpluses. It would not equally approve adjustments toward scarcity. Nonfarmers would instantly rebel, and with reason, for it is one thing to use the power of the Government to win justice for agriculture and quite another to use that power unfairly.

Furthermore, the methods permissible under the Agricultural Adjustment Act do not lend themselves to the creation of scarcity. They make a distinction between the cooperator and the noncooperator in production adjustments. Through a benefit payment on his allotted share of the domestic production, the former receives a greater net income than the latter. In wheat, for example, cooperators reduced their acreage by 15 percent in 1934. With an average yield of 11 bushels, and a farm price the same as last year's, the cooperating farmer stands to get \$855 from 85 acres, while the noncooperating farmer will receive only \$814 from 100 acres. In 1933 the cooperating cotton farmer growing 75 acres received about \$1,707 for the lint. For the lint from 100 acres the noncooperating farmer received only \$1,663. With hogs at an average farm price of \$11 per head, the cooperating farmer, after reducing his corn production by 25 acres and his hog production to 112 head, would take in \$1,938 for his hogs. The noncooperator would receive only \$1,650 for 150 head. In the case of burley tobacco at present prices the signer gets \$750 for the product of 6 acres whereas the nonsigner gets only \$584 for the product of 10 acres. In addition, the cooperating farmers save on fertilizer, twine, and other expenses of production. Obviously, however, the relative advantage would diminish were production reduced enough to send prices skyrocketing. In that event the noncooperator would make more on full production than the cooperator would on restricted production. Soon there would be a new surplus. To reduce production excessively would put a premium on noncooperation, and wreck the project.

### Essentials of Permanent Recovery

As already noted, the towering export surpluses are mostly gone. But the 50,000,000 acres formerly devoted to production for the foreign market, though mostly held out of use in 1934, are still in farms. We must not forget the existence of these surplus acres. Normal growing conditions, in the absence of Government help in

agricultural adjustment, would build up the farm surpluses again in 2 or 3 years. For the time being, however, it is necessary to focus our attention largely on the disappearance of the farm surpluses, and on the resulting improvement in agricultural prices, particularly in the prices of the great export crops. To the extent that current price improvement is due to the drought it is impermanent. What are the requirements of permanent farm recovery?

One of the outstanding long-time objectives of the national administration is to lay the foundation for an era of abundance. It is therefore essential that the Agricultural Adjustment Administration, in mapping its policy for 1935 and 1936, should consider to what extent agricultural and national prosperity can be advanced by a restriction of the farm output greater than that necessary to compensate for loss in foreign markets. Can true prosperity be had for agriculture or for the country as a whole by creating domestic shortages or continuously restricting production? Ninety percent of the farmers will say no. Yet some farmers may come to believe that their prosperity depends on man-made scarcity.

In the emergency we had thoroughly unbalanced price and production relationships between agriculture and industry. Prior to 1933 agriculture did not reduce its production appreciably, but city industries reduced their production greatly. From 1929 to the spring of 1933 farm production dropped only about 6 percent while farm prices dropped 63 percent. In the same period the output of farm implements dropped 80 percent, of motor vehicles 80, of cement 65, of iron and steel 83, of auto tires 70 percent. Yet with these great restrictions of industrial output there was relatively little reduction in industrial prices—farm implements dropped only 6 percent in price, motor vehicles 16, cement 18, iron and steel 20, and tires 33 percent. The search for maximum profits was tending to develop a "scarcity economics", in which perennially the output of industrial production was reduced unduly, while prices remained so high that many consumers had to stay out of the market.

By the spring of 1933 the whole relation between agriculture and industry was thoroughly out of adjustment. Agricultural production was practically as high as ever while industrial production was at an extremely low level; for prices the situation was reversed—agricultural prices were away down, yet industrial prices had dropped relatively little. The basic recovery problem was to raise industrial production without raising those industrial prices which had not fallen, and at the same time to raise agricultural prices without reducing production beyond the need to compensate for the decline in the foreign market and eliminate surpluses.

Since May 1933 agriculture has had the help of the Government in controlling production for the purpose of raising prices. The Agricultural Adjustment Act states that the aim of production control is to restore agricultural prices to their fair relationship with other prices and to continue such adjustments as will maintain that balance. During the past year drought and agricultural adjustment together have largely taken care of the surpluses. This has brought prices to the farmer a long way back toward parity yet without as yet curtailing domestic consumption.

### Limitations of Production Control

There is reason to doubt whether agricultural income as a whole can be restored completely to parity merely by production control. While farm prices might be further raised by restricting domestic consumption along the lines of "scarcity economics", it is doubtful if this would appreciably raise farm income. One of the major elements in the restoration of agricultural parity is an increase in the purchasing power of the industrial population. A second major element is a reduction in the prices of industrial products that have advanced too far. When the industrial production and pay rolls are increased the industrial population is in a position to buy more food at parity prices. When industrial prices are lowered the farmer is in a position to buy more industrial goods with his money income. Thus, higher farm income and a higher standard of food consumption for the industrial population both turn on the employment and purchasing power of the industrial population. The farmer's great need now, as he continues his efforts to produce a balanced output, is that of getting full employment to the industrial population in order that consumers may be able to pay fair prices for higher consumption. Necessary as it was to meet the curtailed foreign markets and the surplus crisis of 1933, reduction in output is only a very partial and paradoxical answer in the long run to the crying need which is briefly expressed in the phrase, "balanced abundance."

The problem is to retain fair and reasonable profits without falling into the pit of "scarcity economics." As long as farmers had no power to control the total production or price of their products they were not seriously concerned with the problems of "scarcity economics." But now that farmers enjoy powers which are fairly comparable with those of city industries with respect to production and price control, it becomes necessary for all of us to spend more time thinking about the road to "balanced abundance" instead of "competition for profits induced by scarcity."

### SOCIAL COSTS OF FARM ADJUSTMENT

Amid the rush of events connected with farm readjustment, it is difficult and yet important not to be overwhelmed by things immediate. We think about farm prices and farm incomes. We want to narrow the spread between actual and parity prices. And we judge the success or failure of crop control accordingly. But this is an inadequate test. It reckons only receipts and ignores expenses. There are costs to consider as well as returns. These costs, as nearly as possible, should be estimated in terms human as well as monetary, social as well as economic. Moreover, they should be compared with the probable costs, in similar terms, of any other available means of dealing with the farm problem. Readjusting production is necessary for lack of means to increase the demand. If we increase the purchasing power of the domestic market or of the foreign market or of both together, crop restrictions can be relaxed. Whichever course we finally adopt, it will involve costs, which will fall not wholly or even largely on any one group, but on the entire Nation. Both justice and expediency urge us to compare the alternatives.

Among the costs of readjusting production downward, which we should consider before figuring the costs of widening the market, there are intangible elements. Some of these may prove very important. Prominent among them is the social, as distinguished from the administrative, cost of regulating agriculture. Some call it regimenting. It is well to call a spade a spade; but the term "regimentation" implies compulsion from above, whereas the farm adjustments in which we are engaged depend essentially upon the choice of the participating farmers. Strictly, the adjustment of farm production under Federal guidance involves not regimentation but merely social discipline. But this discipline may carry us far along new paths if we do not find an efficient substitute. It will involve unexpected and incalculable costs.

For example, it will involve a restriction of agricultural opportunity. Farmers may not produce as much of certain things as otherwise they would. Men not now in farming may not enter it unconditionally. The Bankhead Law penalizes the production of cotton above a certain quantity; and the Kerr-Smith Act applies a similar principle to tobacco. Processing taxes affect the conditions under which cotton, wheat, tobacco, and corn and hogs may be produced. Milk agreements help existing dairymen, at the cost of a restraint upon new competition. These are intended consequences. But persons kept out of agriculture may properly demand compensation. The regulation of agriculture for the benefit of insiders creates responsibilities toward outsiders. It involves intangible costs, not the least of which is a national obligation to protect all the groups affected.

### No Escape Through Ruthless Competition

The alternative course is the competitive elimination of men and acres. This would mean endless distress, urban as well as rural, for men driven off the land would demand doles. Moreover, it would not obviate the need for social discipline. It would increase the need. Piling agricultural unemployment upon urban unemployment would create an immense new problem of poor relief, which would necessitate regimenting the recipients. It would flood the labor market, so that the Government would be forced to regulate it. We could not avoid economic regulation merely by not doing what we are now doing for agriculture. We might get a different kind of regulation, but that is all. Only by creating more employment, both in agriculture or in industry or in both, can we remove the need for economic controls. Returning agriculture to ruthless competition is not the way.

Meantime, pending the discovery of means adequately to revive demand, we must reckon the costs of regulation. Adjustments in one farm enterprise necessitate adjustments in others. Land can seldom be left idle. To withdraw land from one crop usually means putting it into another; if not into a competitive cash crop, then into something that will affect the balance of production eventually. Cornland planted to legumes will become more fertile. Land taken out of cotton or tobacco may produce food for the farm family, and thus affect the market for foodstuffs produced commercially. Agri-

cultural regulation tends to become general, and to involve related industries such as flour milling, meat packing, and dairy processing. Withdrawing submarginal land from production creates additional responsibilities. Even partially to refuse men access to the land obligates the Nation to offer alternative opportunities.

On established farms, regulation involves an operating cost. It affects the size of fields, the use of machinery and labor, the intra-farm crop balance, and the relation of the farm overhead to the total income. Against the gain in prices, this item must certainly be reckoned. To reduce production greatly, without raising the unit costs, is extremely difficult. Extensive central planning interferes greatly with established farm practice, and obliges farmers to learn new ways. As Mark Twain said, there is no proficiency without apprenticeship, and no pay for apprenticeship. Regulating agriculture hampers its movements and checks enterprise. This is a debit item not to be ignored. Compared with such intangibles, the money costs of farm adjustment are secondary.

### Economic Democracy

Viewing these restrictions and social costs, many honest thinkers believe our farm programs conflict with the essentials of democracy. If that is the case, they should be dropped.

But man's right to live transcends all other considerations. In the present state of the Nation, we must enlarge our idea of democracy, or risk losing what democracy we have. A purely political democracy would not survive a complete economic breakdown in the United States any more successfully than it has done elsewhere. The farm program looks toward an economic democracy thoroughly in harmony with our political democracy.

Farmers demonstrated conclusively that they wanted the Agricultural Adjustment Act. Through the Congress, the country concurred. The administration obtained the support of large majorities before putting any of the acreage adjustments or marketing agreements into effect. When farm opinion failed to unite on a proposed dairy program, the administration withdrew it.

Farmers themselves largely administer the adjustment programs through county control associations. These bodies help to make as well as to administer adjustment policy. Thoroughly democratic in form and spirit, the associations are effective instruments in economic self-government. They began by adjusting county and individual allotments. They were concerned at first about getting Government checks out to farmers as quickly as possible. This pre-occupation soon gave place, however, to a deeper interest in the purposes of the whole undertaking. The committees now study crop supply and demand conditions, and price relationships. They bring general economic information to bear on local farm problems. They are helping the administration in taking a referendum on new corn-hog adjustment plans.

These local associations cannot finally formulate and administer national programs. That duty logically belongs, after all groups have been consulted, to the adjustment administration. But without the help of the county associations, the program could not be made effective. In thus decentralizing administrative work, and at the

same time creating new channels through which farmer opinion may find expression, the Agricultural Adjustment Act promotes true democracy.

As is well known, participation in any acreage-adjustment program was originally voluntary. Later, under special legislation relating to cotton and tobacco, features penalizing noncooperation were introduced. Farmers themselves demanded this change. The Agricultural Adjustment Administration preferred to keep all programs essentially voluntary. It is unnecessary to coerce small minorities, and difficult to coerce large ones.

There is a worse danger to democracy than the extension of democratic principles to farming. Failure to solve economic problems is a worse danger. Such failure leads to class strife, and class strife to civil war. In civil war, whatever the outcome, democratic government disappears, at any rate for a long time. Recent history shows that at a certain point of misery and destitution nations cease to think about liberty, and think only about bread. Then they are ripe for dictatorship. In the United States we have an opportunity to retain our liberty and to strengthen our democratic institutions, while at the same time improving our material circumstances. We can do this by enlarging our concept of democracy and giving it scope in economics as well as in politics.

The exact methods of achieving economic democracy are by no means settled. How far the principle of majority rule applies legitimately to the control of farm production is not yet established, either through experience or discussion. But we cannot rule it out in advance as being inconsistent with democracy. We should certainly give the benefit of any doubt to the voluntary principle, while not regarding that principle as absolute. And we should encourage discussions, far and wide. We should also consider every alternative to the present adjustment programs.

## FOREIGN TRADE IS ONE ALTERNATIVE

One alternative is the recovery of foreign trade. What will an effort to accomplish that entail? American agriculture was developed for trade with the world. Only in international trade can it freely move. Foreign buying of American farm products, however, requires foreign buying power in the American market. Such buying power existed before the war because foreign countries, principally in Europe, had invested heavily in American securities. During and after the war it existed because we lent money to Europe. Neither of these means of restoring our farm exports is likely to be quickly reestablished. There is another means. We may offer foreign countries, particularly European countries, a market in the United States for certain products, in exchange for a market for American wheat, cotton, tobacco, hog products, and fruits. We may lower our tariff wall, in return for a better market abroad; opening the door to foreign goods may displace certain domestic articles. That is the first cost to be considered. Against it must be figured the probable value of the compensating benefit.

What it will cost American industry to share the domestic market with foreigners depends partly on the nature of the goods imported, and partly on the amount of domestic purchasing power available.

Selected goods could be imported liberally into a prosperous America, without hurting the American manufacturer. That we know from what happened before the depression. In the calendar year 1929, during the greater part of which business was active in the United States, we imported merchandise to the value of \$4,399,000,000. Exports exceeded this figure by \$842,000,000. For the great bulk of the exports we took payment in imports, and no one complained. Because we did so American industry had more business than it could have had otherwise. In the ensuing depression imports and exports declined together. Thus in 1932 the merchandise imports totaled only \$1,323,000,000; but the exports were down also—to \$1,612,000,000. Buying less abroad did not give us proportionately more business at home. Conversely, an increase in imports now would not cut down but on the contrary would increase our total business. The exports would increase with the imports.

But the foreign-trade program would involve the risk of producing results other than those expected. We cannot know in advance the probable effect on prices and employment in industry. Nor can we foretell precisely the compensating benefit to agriculture. Asking industry and labor to make sacrifices for agriculture demands some assurance that the farmer will benefit. The purchasing power which foreigners would obtain in the United States market were they permitted to sell more goods here might be left on deposit, or invested in American securities, or devoted largely to the purchase of nonagricultural goods. That would leave unchanged the need to regulate agriculture. Formerly, when Europe had the means to do so, it bought farm goods heavily in the United States. Will it do so again?

### Changing Relationship of the Hemispheres

This question does not admit of a dogmatic answer. The relationship between the Old and the New World has changed greatly. In the nineteenth century, when the United States was Europe's bread basket, this country took European goods readily in exchange for its cereals, meats, and fibers. It needed what Europe could supply. The need is smaller now. Other agricultural surplus countries, notably Canada, Argentina, Australia, and India, have more need of Europe's industrial goods. Against the competition of these countries, backed by their willingness to buy where they can sell, the United States must struggle. We cannot fully overcome this handicap merely by lowering our tariffs. Spontaneous reciprocity has advantages over the contrived variety. The cold fact is that while we need Europe greatly as a market, we do not need it greatly as a source of supplies. This is a hurdle to be leaped and not evaded.

Another difficulty is Europe's battle for self-sufficiency. Great Britain is relying more on Empire sources of foods and is encouraging Empire-grown cotton. France is practically self-sufficient in foods; Germany is nearing self-sufficiency. Last year Germany produced a slight excess of carbohydrates over its domestic requirements and about all the proteins it required. In fats, however, it remained heavily dependent on imports. Italy has forged ahead in food production but still depends upon imports for 13 to 18 per cent of its food supply, measured in calories. The great Italian

deficit is wheat. Even countries like the Netherlands and Belgium, which cannot become self-sufficient in foods, buy abroad less than they would if they could export factory goods freely. But Europe is getting used to this increased self-sufficiency and has vested interests therein. Enterprises fostered by it cling to life. They have powerful defenders.

Fortunately, a change would benefit both hemispheres; for on both sides of the Atlantic the principle involved is the same. Each continent tries to live at home because it is difficult to sell abroad. In Europe the shoe pinches mainly industry; in the United States it pinches mainly agriculture. Shifting the pressure partly from one foot to the other in both hemispheres, simultaneously but in opposite directions, should ease the total strain. More international trade would create new purchasing power and would promote efficiency. Wresting trade from its natural channels, as we now do, adds to the operating costs of every farm and every factory. It violates the principle of comparative advantage. For every interest which the system nourishes, another interest, perhaps a more efficient one, dies. Europe has suffered more havoc of this kind than the United States, and has as much interest in discarding the strait-jacket.

#### Doubtful Value of So-Called "Self-sufficiency"

Europe's motives for working toward self-sufficiency are the fear of war and the necessity to correct an unfavorable balance of trade. Probably the economic motive is the stronger. National defense requires many things besides foods; many things which Europe must import, such as oil, rubber, cotton, and various minerals. In these articles Europe can never be self-sufficient. They can be stored; but first they must be purchased, and self-containment makes their purchase difficult. Increased self-sufficiency in foods does not really strengthen Europe's defenses, because it involves a reduced power to get other military necessities. But even in food, with the most prodigious efforts, Europe cannot become nearly self-sufficient. It still has to import something like 500,000,000 bushels of wheat annually. The greatest possible progress in self-sufficiency cannot free Europe from the need of imports, or allow it to ignore a blockade. Group interests that profit from the movement toward self-sufficiency stress the insurance feature for more than it is worth. They want to offset the economic drawbacks, which are tremendous. Europe's struggle for self-containment is costly, painful, and relatively inefficient. It subjects the urban population to a fearful strain. Limiting the importation of foods makes the food supply less abundant, less varied, less nourishing, and less cheap. It forces Europe to depend increasingly on cereals in order to get more calories from the soil and to pay more for a poorer living.

That is only half the story. By refusing to buy foodstuffs abroad, Europe loses its market for factory goods abroad. Thus for a thoroughly illusory self-containment the people pay in a reduced standard of living and in reduced employment. A majority would welcome a chance to exchange industrial goods for foodstuffs. This would involve some agricultural readjustments in Europe, just as it would involve certain industrial readjustments in the United States. But these would not be excessive. By importing cereals,



including feed grains, Europe could raise more meat and dairy products, and maintain larger rural populations. In the United States, on the other hand, the resulting improvement in farm buying power would strengthen the manufacturer's domestic market. There would be more business all around.

### Restored Trade Would Be Mutually Beneficial

Europe needs the farm goods we have to sell, and foregoes them only from necessity. The advantage to the American farmer of enabling Europe to buy here once more would be enormous. American agriculture depends far more on foreign trade than does American industry. From 1921 to 1930 this country exported more than 13 percent of its farm production, and the trade constituted about a third of its total exports. Moreover, this third represented only primary agricultural products such as wheat and flour and cotton. It did not include many agricultural products elaborately manufactured and exported as manufactured goods. Since 1929 our farm export trade has declined in value nearly 60 percent. Restoring it substantially, through some increase in industrial imports, would give agriculture new life.

There would be no countervailing penalties upon industry. Broadly agricultural trade can increase only through an increase in the number of consumers. This is a consequence of the often-mentioned limitations of the stomach. Hence the only feasible alternative to the recovery of the agricultural export trade is the contraction of agriculture. No similar contraction of industry would result from an increase in industrial imports. For many industrial products the potential demand is boundless. Upon agricultural consumption the final limitation is physiological. Upon industrial consumption the final limitation is simply purchasing power. Whatever increases purchasing power increases the manufacturer's market. Hence the admission of foreign goods into the American market, since it would be accompanied by an increase in the purchasing power of the farmers, would handicap industry far less than the alternative policy of enforced farm contraction would handicap agriculture. Ultimately, indeed, the revival of normal international trade would permit great industrial expansion, besides removing much of the so-called "regimentation." Industry as a whole has as much to gain from this program as agriculture.

The long-continued decline in the value of our agricultural exports was checked in the marketing year 1933-34, in which domestic exports of agricultural products, exclusive of forest products, were valued at \$794,000,000, compared with \$590,000,000 in 1932-33, \$752,000,000 in 1931-32, and an average of \$1,792,000,000 during the 5 years 1925-26 to 1929-30. This gain in the value of exports resulted from the devaluation of the dollar and from the influence of reduced production on prices. The volume of exports, on the other hand, continued to decline. On the basis of 100 representing the average exports of agricultural products in the 5 years immediately preceding the war, the export volume in 1933-34 stood at 83, compared with 85 in 1932-33 and 98 in 1931-32.

## RECIPROCAL TRADE AGREEMENTS

The Federal Government's program of reciprocal trade agreements looks toward the expansion of our foreign market for both agricultural and industrial products. Its success will depend on the extent to which we and the countries with which we seek to negotiate are willing to make reciprocal concessions. Foreign countries must give us substantial opportunities to sell them products, agricultural and industrial, which we can supply on a competitive basis. We must offer tariff reductions which will actually permit foreign countries to sell more of their products to us. Nothing can be achieved by making only such arrangements as will involve no sacrifice on either side.

It will be most difficult to get concessions on commodities which the importing countries produce in large volume. In such cases the foreign country, in making a real concession, must expect to contract its own production. It will naturally demand important compensating advantages. Of all agricultural products, it will probably be most difficult to obtain concessions on wheat. Even in the case of wheat, however, there is reason to hope that certain countries that have been striving for self-sufficiency and, in fact, in the last 2 or 3 years have actually achieved it, may conclude that such a course is uneconomical and likely to be disastrous eventually.

Foreign trade restrictions in hog products have fostered some increases in hog production in our foreign markets. Also, however, they have reduced consumption by raising prices. It should be easier to get concessions on hog products than on commodities the production of which has been expanded more.

## Opportunities With Fruit and Tobacco

The best opportunities for trade bargaining concern fruit and tobacco. Trade barriers in importing countries have not caused any great increase in the production of fruit either in the importing countries themselves or in countries whose exports are not affected. In many cases our fruit exports have been subjected to restrictions, not in order to protect producers of the same products, but because they are considered luxuries. They are either taxed heavily for revenue, even though in some cases a lower tax would yield a larger return, or are largely excluded from some countries that desperately need to balance their international payments and seek to do so through restrictions on imports.

Tobacco has always been heavily taxed, but the taxes in many cases have risen to a point at which they reduce consumption. In a few countries, in Italy for example, domestic production has been stimulated, and it will be difficult to regain the market we have lost. In other countries tobacco production is less important, and lower import taxes might well result in increased imports from the United States.

Our cotton exports cannot gain directly from tariff bargaining. Most of the large foreign cotton-manufacturing countries do not produce cotton within their borders and only to a limited extent in their colonies. They are glad to get supplies at the lowest possible

cost. Only one country, Germany, has restricted imports of American cotton. Germany did so not for the protection of her domestic interests; on the contrary, German textile manufacturers suffered. The reason was entirely Germany's inability to pay for the necessary imports. Indirectly, however, cotton would benefit greatly from a revival of international trade.

### Agreement Concluded With Cuba

Progress is being made in the organization of the tariff-bargaining work. Interdepartmental committees have been established on which this Department is represented. The State Department has announced an intention to negotiate trade agreements with many countries in Latin America and western Europe. Only one agreement has been concluded so far under the new tariff-bargaining law. This was signed with Cuba on August 24, 1934. In one fundamental respect it differs from the arrangements that may be concluded with other countries. In the Cuban agreement, the United States and Cuba grant to each other exclusive preferences on import duties which are not extended to other foreign countries. In general, under the terms of the tariff-bargaining law, the policy will be pursued of extending generally to all countries the concessions made on import duties by the United States. This is not true in the case of Cuba, to which we give preferences ranging from 20 to 50 percent, and Cuba extends to us preferences from 20 to 60 percent from the general duties applicable to other countries.

### Concessions of Real Value to United States

The agreement with Cuba secures concessions that will be of real value to American agriculture. Lard is our most important agricultural export to Cuba. Only the United Kingdom and Germany have in the past surpassed Cuba in importance as a market for American lard. Our exports of this product to Cuba declined from 80 million pounds in 1929 to 11 million pounds in 1933. The principal factor contributing to this decline was the increase in the Cuban duty on lard from the equivalent of \$1.45 to \$9.60 per hundred pounds. In addition Cuba imposed a consumption tax amounting to \$1 per hundred pounds on lard. The total charge was practically prohibitive. By the terms of the agreement with Cuba, however, the Cuban duty on lard has been reduced to \$2.27 per hundred pounds; it will be reduced to \$1.86 on September 3, 1935, and to \$1.45 per hundred pounds on September 3, 1936. Cuba also agreed to eliminate the consumption tax by the last-named date. Similarly, favorable concessions were made on the duty on vegetable oils, notably cottonseed oil, which is an important item in our exports to Cuba. Cuba agreed to reduce the refined cottonseed oil duty from \$6.07 to \$1.36 per hundred pounds. Other agricultural products upon which substantial duty reductions or increased preferences were granted by Cuba were wheat flour, pork, potatoes, rice, and canned fruits and vegetables. Cuba also made substantial reductions in a long list of manufactured articles. These reductions, to the extent that they result in increased exports to Cuba of manufactured goods

and increased employment in our manufacturing industries, will redound to the benefit of agriculture.

In return for these concessions on the part of Cuba, the United States agreed to a reduction in the import duty on sugar, a reduction in the duty on tobacco and rum, and seasonal reductions in duties on certain fruits and vegetables. In the case of sugar and tobacco the reductions in the United States duties applicable to Cuba are accompanied by import quotas which limit the quantity that Cuba can place in this market. The quota on sugar was provided for by legislation passed by the last session of Congress. The quota on tobacco is provided for specifically in the agreement.

In providing for these quotas an important principle affecting the agricultural adjustment program has been established, namely, that with respect to products the production of which is being restricted or curtailed in the United States, there should be a corresponding restriction or curtailment in the importation of like products from foreign countries. This is a matter of logic. We cannot be in the position of reducing our own production in order to dispose of unwieldy surpluses and to obtain a fair return for our farmers and at the same time permit foreign countries to increase their exports to this market and take up the slack arising out of reduced domestic production. With respect to both sugar and tobacco, the agreement provides that if the adjustment program of the United States is abandoned, or substantially abandoned, the import duties will revert to those in effect at the time of the signing of the agreement.

The reductions in duty that Cuba has made, combined with an improvement in their purchasing power resulting from more favorable returns on their principal products, should permit the United States to regain a substantial part, if not all, of its lost market in Cuba.

### THE DROUGHT

The drought of 1934 was the worst ever recorded in this country. It extended over 75 percent of the area of the country and severely affected 27 States. It cut down the yields of food grains and of cotton, reduced tremendously the production of feed, forage, and pasture, and necessitated a heavy reduction in livestock numbers. Food supplies for the Nation remained sufficient. There were on hand large stocks of bread grains and of several other food products, the production of canning crops was above normal, fruits and vegetables were fairly abundant outside the drought area, and the supply of meat, dairy, and poultry products was adequate for the rest of the calendar year. Local supplies of certain food products, however, were short in many areas. Reflecting the shortage of feed grains and roughage, there will be a sharp reduction in market supplies of meat and other livestock products in 1935, even if the growing season should be normal. In the areas hardest hit farmers suffered a decline in their income. For the country as a whole, however, the drought affected farm income but little. Higher prices tended to offset the reduction in marketings, and farm income, including benefit payments, for the entire country showed a substantial increase over the previous year.

Beginning in the early spring, the drought first became serious in the Northwest. From eastern Montana, the Dakotas, and Minnesota it spread to the Southeast, to the South, and to the Southwest. By the end of May it had become the most extensive drought on record in this country. It was severe in part of the Ohio Valley and the central and upper Mississippi Valley, throughout the central and northern Plains, over most of the Rocky Mountain sections, and in the Great Basin of the West.

### No Indications of Permanent Change

There are no indications, however, that the drought constituted a permanent change to desertlike conditions in the Midwestern States. The Weather Bureau's records suggest that extreme drought in particular regions may be expected to occur at intervals of 30 to 40 years. Rain or snowfall tend to run in alternating periods of above and below normal. Each period covers a long time, and the periods are not uniform in length. The trends show up clearly, however, when we study the records graphically, and draw curves to smooth out yearly variations. In the long run the precipitation records vary in a wavelike progression. The difference in the rainfall in the periods of comparatively heavy precipitation, as compared with that of the periods of lighter rainfall, is marked. Moreover, the trends are rather uniform from maximum to minimum and vice versa. For the central Mountain States the records show a well-marked tendency to decreasing rainfall during the last quarter of a century. On the other hand, in much of the South, especially the Southeast, until recently the tendency was toward heavier rains.

In the central Mountain area the last maximum appears for the 10 years up to about 1908, or about 25 years ago. Since then a 10-year moving average shows a rather regular decrease. Thus the average precipitation in Minnesota for the decade ended with 1933 was only a little more than 23 inches, as compared with an average of 29.5 inches for the 10 years ended with 1908. The later decade had nearly 30 percent less rainfall than the earlier one. In a region where the normal precipitation is rather small such a decline is obviously very important. Centering in Minnesota, this decline covered the northern Plains to the west, especially the Dakotas, and extended to the western part of the Lake region on the east. About midway between the long-interval rainfall depressions appear successive years of comparatively abundant rains. There is nothing to indicate that history will not repeat itself in this respect. In another temporary period, not now predictable, much heavier rains undoubtedly will prevail.

Drought in the central valley began early last year. It did not immediately cause any general falling off in production, though we had a short wheat crop and a short hay crop for the country as a whole. But when the 1934 drought developed its results were far worse than they would have been had the season begun with normal moisture in the ground. Areas depending on irrigation water and all crops that need considerable subsurface moisture had a tremendous initial handicap. Snowfall was light in the western mountains during the winter of 1933-34. Streams dried up that had never dried up before, and lakes fell to record low levels. Supplies of irrigation

water failed and even supplies of water for livestock to drink failed in many regions.

Fairly good June rains in the Dakotas and Montana came too late to save the crops. Spring wheat, other small grains, and hay were already ruined. The June rains did help the livestock situation and improve the range. Meantime in other areas the drought became worse. It struck the western part of the main Corn Belt a fearful blow just when the corn could stand it least. High temperatures, hot winds, and dryness hit the crop as it was beginning to tassel. Fairly good rains late in July and in August improved matters in the eastern part of the Corn Belt, in the Potomac River watershed, and in some dry areas east of the Mississippi. Nevertheless, corn

Iowa and west-central Illinois, corn for grain was practically a total failure. In Texas, Oklahoma, and Arkansas only the early planted corn produced grain.

The first half of August brought very helpful showers to most of the Ohio Valley area, and the last half of the month had much cooler weather, with substantial to heavy rains, in much of the Southwest, especially Oklahoma and Missouri. Moreover, during September wide-spread, generous rains effectively relieved droughty conditions, at least temporarily, over a large midwestern and southwestern area extending from southern Minnesota and Nebraska over the western Winter Wheat Belt. The rains were especially timely in conditioning the soil for seeding winter wheat over the most important sections of the belt.

### Reduction of the Surpluses

Outstanding among the results of the drought was a great change in the farm-surplus situation. Normal wheat consumption in the United States to the end of the 1934-35 year, assuming neither imports nor exports, will reduce the wheat carry-over to about 156,000,000 bushels, as compared with an average of about 339,000,000 bushels in the preceding 5 years. The 10-year average previous to 1929 was 110,000,000 bushels. The cotton carry-over will be close to normal by the end of the 1934 season, though the drought was less responsible for reducing the supply of cotton than the acreage adjustment.

Production of corn, oats, barley, and grain sorghums was only about 63,000,000 tons as compared with an average of 101,000,000 tons for the period 1928-32. This reduction in the feed supply entailed corresponding adjustments in livestock numbers. The number of hogs fed for the marketing year beginning October 1, 1934, may be less than 70 percent of the number fed for the preceding marketing year. By next spring cattle numbers will be sharply reduced, in the most rapid liquidation ever known.

Prices of many of the crops severely affected by the drought rose during the summer. Grain and hay prices advanced sharply. Cotton prices advanced when drought damage to that crop became apparent. Cattle prices did not respond immediately, because heavy marketing from the drought areas occurred. Other classes of livestock, except hogs, either failed to advance or declined in prices

through forced marketing. Hog prices improved significantly. Livestock products showed a quicker tendency to rise in price than livestock. Butter and egg prices strengthened notably. Ultimate effects of the drought on prices will be greatly different from the first effects. The prices of cattle, sheep, and poultry will undoubtedly advance after the forced marketing is over. The slower response of livestock prices to the drought will probably cause these prices to remain relatively high longer than other farm-commodity prices.

### Drought Relief Action

The Government relieved farmers who had been made destitute. It bought starving cattle, shipped food, feed, and seed into the drought-stricken areas, assisted farmers in maintaining their foundation herds, and in digging or deepening wells, and provided employment. In various activities the Agricultural Adjustment Administration, the Federal Emergency Relief Administration, the Federal Farm Credit Administration, and other Federal agencies cooperated. Benefit payments for crop adjustments and funds available for the control of livestock diseases were important sources of relief. An important emergency step modified the planting restrictions on farms under A. A. A. contracts so as to encourage the production of forage.

The cattle buying resulted up to the middle of October in the purchase of about 7 million cattle in 20 States. For these cattle the Government paid \$92,000,000. Formerly in times of severe drought the markets quickly became glutted with thin cattle. Farmers had to sacrifice many of their best animals. This year they did not have to force their stock upon the commercial markets at a heavy loss. The Government paid a fair price. Farmers were able to dispose of their older and less profitable stock, as well as calves and young cattle, for which they had insufficient feed. Had there been no drought, a reduction of some 4 million in cattle numbers would have been desirable. Nineteen hundred and thirty-four was the peak of the cycle in cattle numbers, and the heavy supply depressed the price. A large proportion of the cattle that had to be removed owing to the drought was no loss to the cattle industry. But as the drought grew worse it became necessary to go beyond this point and to speed up cattle purchases to the limit set by processing facilities.

However, the purchase of cattle meant that as many more were saved from starvation. Feed which the purchased cattle would otherwise have eaten became available to tide 7 million other cattle over the winter.

Funds for the cattle buying came partly from an appropriation for a cattle-adjustment program under the Jones-Connally Act and partly from a special congressional appropriation of \$525,000,000. The Agricultural Adjustment Administration established a field headquarters at St. Paul, Minn., and obtained the cooperation of extension directors, agricultural college leaders, and county agricultural agents. Accredited veterinarians, or local committees appointed for the purpose, appraised and purchased animals. Field agents of the Federal Surplus Relief Corporation took delivery of the animals and shipped them to be slaughtered.

For the cattle purchased the Government paid an average price for all ages of about \$13.50. The prices included a benefit payment to cattle producers free of all liens. The schedule was uniform for all States. Including the benefit payments, it ranged from \$12 to \$20 for cattle 2 years old and over, from \$5 to \$15 for yearlings, and from \$4 to \$8 for calves under 1 year. These prices were established as nearly as possible on the basis of what cattle would bring on the slaughter market, without any deduction for shipping and marketing costs. Thus the cattle-buying program brought the market to the farm. Six dollars of the price paid for 2-year-olds, \$5 of the yearling price, and \$3 for the price of calves constituted benefit payments. These benefit payments roughly equaled the shipping and marketing costs that farmers would have had to pay had they shipped their cattle to market in the usual manner. Farmers and their creditors alike generally found the arrangement fair and acceptable.

### Purchase of Sheep and Goats

Most of the cattle purchased, except animals condemned as unfit for food, were delivered to the Federal Surplus Relief Corporation for slaughter and canning in commercial packing plants for later distribution to needy families. Some cattle were shipped to States where pasturage was available. Later, the Government launched a program contemplating the purchase of several million head of sheep and goats. It arranged to pay \$2 a head for ewes 1 year and over and \$1.40 a head for female Angora goats of the same age. Flocks came off the high mountain ranges 3 to 6 weeks early as a result of the drought. They moved into feeding grounds often entirely bare of vegetation. Supplies of hay and other feeds were scarce and dear. It was necessary, in order to avoid severe winter losses, to reduce the flocks from 30 to 60 percent. A Federal livestock feed agency was set up in Kansas City, to aid in the distribution of feed and forage. County committees surveyed feed needs in the drought areas and arranged with local dealers to order supplies.

Various other activities under the Agricultural Adjustment Act aided farmers in dealing with the drought. Of course, the drought had not been anticipated when the 1934 A. A. A. plans were being formulated. As it worked out in the end, however, more feed was available in 1934, in proportion to the livestock, than would have been available if production-control programs had not been in operation. These programs brought about an orderly adjustment in hog, cattle, and sheep numbers, and a net increase in forage-, pasture-, and hay-crop plantings. As a result, agriculture came through the season with about 6 percent more grain per grain-consuming animal, and with about 17 percent more hay per hay-and-pasture-consuming animal than would otherwise have been available.

Without the programs, the production of feed grains would have been somewhat larger. But livestock numbers especially of hogs, would have been much larger. Without the adjustment programs, the volume of grain available per grain-consuming animal unit would have been about 1,040 pounds, as compared with 1,100 pounds that will actually be available or an increase of about 6 percent due to the A. A. A. programs. Encouragement given by the programs to hay production will make the current hay supply about 13 percent greater



than it otherwise would have been. In the case of hogs particularly, the adjustment programs show a substantial benefit. Hog production would have been much larger had the programs not been put into effect, and the enforced liquidation of surplus stock at very low prices would have involved severe loss. The hog programs averted disordered and expensive last-minute adjustments. Then after the drought appeared, if it had not been for the cattle- and sheep-buying programs, cattle and sheep prices probably would have fallen below the point at which they could offset marketing costs.

### AN EVER-NORMAL GRANARY

One effect of the drought is to emphasize the importance of maintaining adequate farm reserves, particularly in regions subject to extreme hazards. In the pioneer epoch, farmers stored feed and hay against lean years as a matter of course. With the development of communications and of transportation, and with the resulting evolution of a more specialized and more commercialized agriculture, the practice declined. Farmers came to doubt that it paid. In the dry-land regions the newer system had obvious risks. These risks could be carried during the years of moderately heavy rainfall, the more easily because fairly good prices prevailed. The chance to lay by a money reserve weakened the motive to establish a commodity reserve. But the situation now is different. Against the combination of weather hazards and low prices, farmers need the protection of an adequate reserve with safeguards against any possible depressing influence on prices. Here, in conjunction with the crop-adjustment program, is an obvious responsibility of the Agricultural Adjustment Administration. Means should be developed to conjoin the adjustment of plantings with protection equally against crop failure and against the tendency of large stocks to depress prices.

### Significance of Curtailed Foreign Outlet

Since 1933 the demand from abroad for American farm products has undergone no material change. Our exports of grains and livestock products have almost disappeared. We continue to export cotton and tobacco and fruits in large quantities, but the foreign market for these commodities is not what it was. In the case of all food products except fruits, we have still to think in terms of a sharply curtailed foreign outlet. As far as we can see for the moment, our emergency program and the first phases of our long-time program must be shaped toward reduced production for export. This may be less permanently true of cotton than of grains and livestock products. For the present at any rate, however, the cotton situation also calls for production adjustment.

But reduced production for export raises certain new questions. Adjustments nearer to domestic requirements need to be coupled with protection against crop failure. Farm reserves must be larger than the so-called normal "carry-overs" of predepression days. Formerly, when we produced heavily for export, carry-overs did not have to be large. It was simply necessary, in seasons of small production, to reduce the exports. In proportion as this automatic safeguard disappears, it becomes more important to maintain reserves

from season to season. Such reserves tend to stabilize both production and prices. Our emergency experiments have revealed more clearly the requirements of controlled production. One requirement is a method of absorbing the shock to markets which occurs when seasonal conditions violently disrupt the intended adjustment.

When production varies greatly, either through weather conditions or the action of farmers, prices fluctuate correspondingly, but not usually in a manner permitting farmers to break even. They lose more on the declines than they get back on the advances. This is largely because speculators intervene between the producers and the consumers. Speculation depresses prices excessively to farmers in seasons of surplus production, and keeps from them the full benefit of rising prices in seasons of low production. Too much of the consumers' dollar goes to nonproducers. Hence producers and consumers have a common interest in the control of both production and marketing.

We now have a fairly satisfactory mechanism for controlling acreage, and in the case of some crops for the control of marketing. We have had some experience with storage for the double purpose of insuring the farmer a satisfactory current price and of maintaining reserves.

### The Cotton and Corn Loans

In 1933 the Federal Government established the Commodity Credit Corporation. Up to the present it has lent money only on cotton and corn, and a small amount on naval stores, but the loaning facilities could be expanded to cover other storable commodities. The corporation obtains its funds from the Reconstruction Finance Corporation, which has made commitments of \$500,000,000 to it for use in connection with the loan programs.

During the 1933-34 season, the basis of the cotton loans was 10 cents per pound. Borrowers agreed to participate in the 1934 cotton-adjustment program. The Commodity Credit Corporation loaned direct to cotton borrowers approximately \$60,000,000, and the banks and other lending agencies of the interior, who were authorized to participate in the loan program, loaned an additional amount of approximately \$60,000,000. The Commodity Credit Corporation agreed to buy in such paper as was offered it by the interior banks and lending agencies prior to July 1, 1934. The purchase of this paper brought the total loans made by the corporation up to a total of approximately \$102,000,000. It is estimated that more than 420,000 cotton farmers have been benefited under this program. Approximately 64 percent of the total amount loaned was liquidated by September 12. In 1934, the administration continued its cotton-loan program, with the loan basis increased to 12 cents per pound.

On corn during 1933-34 the Administration made loans to producers at 45 cents a bushel. About 270,000,000 bushels were sealed in farm cribs. The loan value was above the current market price of corn at the beginning of the season. Subsequently prospects of reduced corn production raised the market price, and farmers were therefore able to liquidate their loans at a substantial profit. Scheduled originally to end on August 1, 1934, the Government extended the corn-loan program to September 1. Up to September 15, 160,000,000 bushels had been released from storage.

As in the case of cotton, the Government will continue the corn-loan policy to cover the 1934 crop. It has increased the loan value to 55 cents a bushel. This price, while below the market price in September, and below the price that is expected to prevail for the marketing season, gives farmers a means of keeping a supply of corn within their control. In a year of short supplies this is obviously an important consideration. On both cotton and corn the loaning policy has proved to be economically sound and helpful to farmers. It has furnished experience that will be valuable in creating the ever-normal granary.

The corn loans, particularly, demonstrated the advantage of farm storage coupled with production adjustments. They removed from the market in 1933 the depressing effect of stocks present above current needs, and established a reserve, which the 1934 drought made invaluable. Under ordinary conditions the excess supply would have moved into commercial channels, beyond the control of the farmers. After the crop failure of 1934 they would have had to buy back the reserve at greatly enhanced prices. But instead of having parted with the surplus, they had simply borrowed against it. It remained available to them at no increase in cost, except the interest on the loans, for maintaining their livestock under drought conditions. Farmers were in a much better position to preserve their breeding stock than they would have been had their cribs been depleted in the usual way.

### Necessary Size of Reserves

Drought years do not usually come in succession and crop adjustments must rest on the expectation of normal growing conditions. Nevertheless, the two seasons of drought through which we have passed raise urgently the question, "What should be an adequate reserve?" We used to consider 120,000,000 bushels a sufficient carry-over of wheat. Perhaps we ought now to plan for a normal carry-over of 200,000,000 bushels, and for much increased carry-overs of some other crops. Means must be developed, however, to prevent the additional stocks from depressing prices. Storage must be linked with production control.

Ordinarily heavy carry-overs reduce the price to producers. Agriculture had painful experience of this fact as a result of the stabilization operations of the Federal Farm Board. Storage by itself, even by the Government, is ineffective. Withholding supplies does not support prices for long if production increases unduly. This country's efforts under the Farm Board to stabilize wheat and cotton prices simply by storing surpluses demonstrated that not even a powerful Government, with ample funds, can bolster prices against overproduction.

With borrowers obligated to cooperate in crop adjustments, the Commodity Credit Corporation could make loans on various storable crops, just as it has done on cotton and corn. Lending at a higher percentage of the current value than is usual in private or Government loans would insure wide-spread participation by farmers. In years of large production, surpluses would be stored on terms fair to the farmers, and yet not involving risk to the Government. The contracts with borrowers for the control of production the following

season should prevent the price of the goods from falling below the loan figure. Hence the loans would be reasonably safe.

This system would have many advantages. It would protect consumers against possible shortages and tend to stabilize production and therefore prices. There is, of course, always a chance of surplus crops 2 or more years running. But even in that case the ever-normal granary would absorb the market shock. It would simply be necessary, following two or more heavy crops, to reduce the acreage sharply. Moreover, the ever-normal granary would furnish a means of regulating the production of livestock. Growers could draw on the stored feed to stabilize livestock numbers. We may have here the beginning of means to control the livestock-production cycles.

Coordinating storage with crop adjustment would have another advantage. Stored commodities could be used in lieu of cash benefit payments. Part of the stored surpluses would probably become the Government's property. This part could be released to farmers as compensation for crop adjustments. Farmers would thus have the possibility of a speculative profit, the amount of which would depend largely on their success in controlling production. Giving the farmer a certain quantity of wheat, instead of a certain amount of cash as benefit payment for crop control, would bring home vividly to the producer's mind the relation between supply and price. It would create another motive for the crop adjustment.

### Plan Would Not Harm Business

As a part of the program the Government would need to guarantee private traders against the apprehension of sudden disruptive releases of stored goods. Commodities would be released only with due regard to prevailing market conditions. Full information as to the storage program would be made public. In the 18 months during which the Agricultural Adjustment Administration has functioned it has played square with business. It will continue to play square. It will not spring any surprises on the market. It will coordinate the storage and adjustment operations so as to promote the ultimate objective of the Agricultural Adjustment Act—the restoration of farm commodity prices to the pre-war parity. Flexibility is essential in adjustment to a changing situation. But keeping a program flexible need not mean letting it become sudden, spasmodic, or harmful to business.

### FARM RESULTS OF RECOVERY POLICIES

Following the passage of the Agricultural Adjustment Act, the position of agriculture improved greatly. Farm-commodity prices in September 1934 averaged 102 percent of the pre-war level as compared with a low point of 55 percent reached in March 1933. Gains in farm-commodity prices were partly offset by increases in the prices of commodities bought by farmers. From 1932 to 1933 the index of prices paid by farmers advanced 2 percent. From March 1933 to September 1934 it advanced 26 percent. However, the exchange value of farm products in September 1934 was 81 percent of the pre-war level as compared with only 55 in March 1933.

In 1932 the average farmer, after paying interest, taxes, and the expenses of production, had nothing left as a return for his capital and management. In 1933, for the first time since 1929, he had left a small net balance after writing down his capital structure. Income from marketings in 1933, with benefit and rental payments added, exceeded that of 1932 by 16 percent, and prospects are for an additional gain of 19 percent in 1934.

The total cash income of farmers from the sale of farm products for the calendar year 1934, including rental and benefit payments and income from the sale of cattle, sheep, and goats to the Agricultural Adjustment Administration, is estimated at approximately \$6,000,000,000. This estimate is based upon an analysis of farm production in 1934, probable prices and marketings of farm products during the last 5 months of the year, and cash income during the first 7 months of the year as previously estimated. The estimated cash income for 1934 is 19 percent larger than in 1933 and 39 percent over 1932.

Estimates of cash income from farm marketings on a calendar year basis from 1924 to 1934, including rental and benefit payments in 1933 and 1934, are as follows:

|           |                 |           |                 |
|-----------|-----------------|-----------|-----------------|
| 1924----- | \$9,785,000,000 | 1930----- | \$8,451,000,000 |
| 1925----- | 10,324,000,000  | 1931----- | 5,899,000,000   |
| 1926----- | 9,993,000,000   | 1932----- | 4,828,000,000   |
| 1927----- | 10,016,000,000  | 1933----- | 5,051,000,000   |
| 1928----- | 10,289,000,000  | 1934----- | 6,000,000,000   |
| 1929----- | 10,479,000,000  |           |                 |

### Farm Realty Values

In the year ended March 1, 1934, the average value of farm real estate for the United States as a whole showed an increase. It was the first year since 1920 to record a gain. This was good evidence of farm improvement; for farm-land values depend ultimately on farm earnings.

From the low point of 73 percent of the pre-war level, to which farm-real-estate values declined in the preceding year, the average value for the country rose in the year ended March 1, 1934, to 76 percent of the pre-war level. The improvement was not distributed equally in all regions. Roughly, the regional changes reflected differences in farm earnings. The greatest relative increases occurred in the South Atlantic and South Central States. Improvement in farm commodity prices and in farm incomes was a leading cause of the upturn in farm-real-estate values. The fact that the gross income from crops increased much more than the gross income from livestock and livestock products was an important reason for the uneven distribution of the gains in farm land values.

This all around improvement is the result of many factors, the separate influence of which cannot be measured. Undoubtedly, however, the recovery program launched by the National Government, with its threefold effort to adjust the general price level through monetary action, to bring farm production more nearly into balance with the demand, and to refinance and otherwise to relieve farm debt is by far the most important.

### Effect of Monetary Policies

Revaluing the dollar benefited agriculture because prices of the raw-material farm products responded promptly, while prices of many of the things that farmers buy increased more slowly. The Government suspended gold payments on foreign account on April 19, 1933. Other steps followed under title III of the Agricultural Adjustment Act, which gave the administration emergency monetary powers. Between April 15 and July 15, 1933, the farm price of cotton advanced 75 percent and the farm price of wheat 92 percent, but this rise was partly speculative and some reaction followed. A revival of textile manufacturing, and the expected crop adjustment, helped the price of cotton. In the case of wheat, the prospect of a short crop was a factor. In both cases, however, the new monetary policy was obviously an important influence, as may be inferred from the advances that took place simultaneously in nonagricultural raw materials. The effect of the devaluation on prices of farm products did not cease with the subsequent stabilization of the dollar at a new value. Farm commodities that had not responded immediately to devaluation responded slowly. As a result of devaluation, agriculture has gained in power to buy nonfarm goods and also in power to meet debts and taxes.

### Results of Crop Controls

The first year's cotton program simply prevented an increase in the surplus. Farmers, however, saved the extra expense of carrying the full-planted acreage to harvest. They received an average farm price of 9.7 cents per pound for their crop, and rental and benefit payments besides. From the lint the growers received about \$633,000,000 as compared with \$424,000,000 realized in 1932. In addition they received \$163,000,000 in rental and benefit payments. Consequently the income of cotton farmers from lint in 1933 was about 88 percent more than in 1932. About half the increase may be properly attributed to the activities of the Agricultural Adjustment Administration. By the end of the 1934 season the world carry-over of American cotton will be close to normal, and higher prices for American cotton should prevail.

Activities of the Agricultural Adjustment Administration helped to increase the income of wheat growers. The cash income from wheat marketings in the 1933-34 season (exclusive of benefit payments) was about \$267,000,000 as compared with \$195,000,000 in 1932. Growers obtained this amount from the sale of only 368,000,000 bushels, whereas marketings the previous season totaled 524,000,000 bushels. Price gains more than sufficed to offset the reduction in the 1933 marketings. Benefit payments added \$98,600,000, so that the total cash income from wheat for the 1933 season amounted to \$366,000,000, an increase of \$171,000,000 over that of the previous year.

In the 1934-35 season farmers will market some old wheat carried over from the previous seasons, and also the new crop, at prices which may give them an income a little larger than they received for wheat during 1933-34. There will also be benefit payments.

In the case of corn and hogs the full benefit to farmers from the activities of the Agricultural Adjustment Administration has not yet been realized. Prior to the midsummer of 1934 prices of hogs and the income therefrom did not improve significantly. Nevertheless, distinct advantages from the adjustment programs may be recognized. By purchasing pigs and sows in the fall of 1933, and subsequently by making large purchases to provide meat for relief, the Government stabilized the market through the winter season. By placing a large quantity of corn under seal for loans, it helped to conserve the supply of corn, and at the same time to slow up live-stock production. Hence the corn-hog program will realize its greatest benefits within the next 12 months. Already prices are reflecting the prospect of better adjusted supplies, and in addition to higher prices farmers will receive large benefit payments. Considering 1933 and 1934 together, hog producers should receive, with the benefit payments, some net gain in income. Still more important, the supply situation will be adjusted to a more profitable basis.

The tobacco program increased the growers' receipts from the 1933 crop by about \$50,000,000. In addition, growers received \$28,000,000 in rental and benefit payments. The total income of farmers from tobacco during the marketing year 1933-34 was approximately double that of 1932-33 and nearly equal to the average for the last 10 years. Tobacco farmers received an increased proportion of the consumer's tobacco dollar.

More than 90 percent of the tobacco growers of the United States and Puerto Rico are operating under production-adjustment contracts. The 1934 crop was approximately 25 percent smaller than that of 1933 and was as much below the average annual world consumption of American tobacco as last year's crop was above that level. For the first time in several years the returns appear to be remunerative to tobacco growers.

### Farm Debt Relief

Great benefit to agriculture has also resulted from action taken under the Emergency Farm Mortgage Act of May 12, 1933, and the Farm Credit Act of June 16, 1933.

Formed by Executive order of March 27, 1933, the Farm Credit Administration merged a number of existing Federal credit agencies and created a central administration. This organization administers the provisions of the Emergency Farm Mortgage Act, and also of the Farm Credit Act, which provides new facilities for production and marketing credit and for cooperative credit. The Farm Credit Act, supplementing the Federal Farm Loan Act of 1916 and subsequent legislation, provides a complete credit service for agriculture which is designed for permanency.

In the prolonged depression, farm credit had virtually collapsed. Many credit institutions were bankrupt, and more than 40 percent of the banks in the country closed their doors between July 1928 and July 1933. The restriction of credit was more pronounced in agricultural areas than elsewhere. Consequently the Farm Credit Administration reorganized the facilities of the Federal land bank system and began refinancing farm-mortgage debts.

Recognizing that depression values did not represent the true worth of farms, the Farm Credit Administration inaugurated the policy of appraising farms on the basis of normal values, and through its refinancing operations provided quick relief to farmers and overburdened lending institutions. Frozen credits were melted and business confidence in agricultural areas revived.

Farm-mortgage debts in the United States in 1932 constituted about \$8,500,000,000, out of a total farm-debt burden of probably \$12,000,000,000. Private institutions and individuals held a large part of the farm-mortgage debt, while commercial banks carried both farm-mortgage and short-term loans in large amounts. The total farm debt in 1932 amounted to nearly three times the total gross farm income of that year and was about equal to the gross farm income of 1929. Under the prevailing credit conditions, the farm debt threatened to ruin both debtors and creditors. The newly created credit facilities relieved both groups.

In the first 15 months under the Farm Credit Administration the Federal land banks made over 450,000 loans to farmers for more than \$1,150,000,000. About 90 percent of these loans refinanced existing indebtedness. By the summer of 1934 the Federal land banks and the land-bank commissioner were holding over \$2,100,000,000 in farm mortgages.

### Claims Scaled Down

Creditors who were desirous of converting farm paper into cash have, in many instances, scaled down the amount of their claims in order to make it possible for heavily indebted farmers to refinance their loans through the Farm Credit Administration. Such scale-downs were necessary where the farmer's total debts exceeded 75 percent of the normal value of his property, since a land-bank commissioner's loan, together with prior liens, may not, under the law, exceed 75 percent of the normal value of the farm property offered as security for the loan. From June 1, 1933, through August 22, 1934, borrowers through the Farm Credit Administration obtained reductions in their indebtedness amounting to more than \$56,000,000. About 16 percent of the borrowers obtained scale-downs of their indebtedness in connection with the refinancing operation. Where such reductions occurred the amount scaled down constituted 26.3 percent of the prior indebtedness.

Furthermore, these borrowers benefited from interest reductions, because the rates charged by the Federal land banks and the land-bank commissioners are usually lower than those previously paid by the borrowers. In interest alone the saving to farmers on farm-mortgage indebtedness refinanced through the Farm Credit Administration is estimated at over \$16,500,000 a year, or nearly one-fourth of the interest formerly paid on the same indebtedness.

Under the Emergency Farm Mortgage Act all borrowers from the Federal land banks obtained a reduction in their interest charges. On Federal land-bank loans in force in May 1933 the interest rate ranged from 5 to 6½ percent, and averaged 5.4. During the 5-year period ending July 12, 1938, the rate of interest on loans made through national farm-loan associations prior to May 12, 1935, is reduced to 4½ percent. The interest rate on loans obtained directly



from the Federal land banks is temporarily reduced to 5 percent. In addition, the legislation authorized postponement of principal payments during the 5-year period ending July 12, 1938, and also provided that extensions of unpaid installments on loans might be granted to worthy borrowers during this period.

### Local Credit Associations

During its first year the Farm Credit Administration also helped farmers build a system of 650 local production credit associations. These associations of farmer borrowers are now in operation and provide a permanent Nation-wide system of low-cost production and marketing credit. The associations make loans on crop and chattel security, and through them production money becomes available to farmers and stockmen at rates of interest which, for the country as a whole, are the lowest ever charged for this type of credit. The associations are now making loans to farmers and stockmen at 5 percent interest. Many private lending agencies charge 2 to 3 percent more.

Thus Federal action under the new administration has furnished three principal types of agricultural relief. (1) By devaluing the dollar it has caused the prices of certain farm commodities to rise more than the prices of the things that farmers buy, and increased their ability to meet debts and taxes. (2) Through production adjustments financed by processing taxes and through marketing agreements with production-control features, it has brought the supply of farm commodities more nearly into a profitable relationship with the demand. (3) Through credit relief it has lightened and refinanced farm debt. It would not be correct to ascribe the whole improvement in farm conditions during the last 2 years to Federal activities. Much must be credited to the country's natural recuperative power. Depressions tend to run their course and to generate corrective forces spontaneously. However, this is a slow and painful process. In important respects, moreover, the present depression differs essentially from preceding depressions. It is world-wide and marked by an unprecedented break-down in international trade in which there has been as yet no significant revival. American agriculture was developed largely for trade with the outside world. The farm recovery of the last 2 years owes little or nothing to recovery in the world market. It is the result mainly of domestic changes, in which the activities of the Federal Government have been the most important element.

### MARKETING AGREEMENTS

Another approach to the problem of increasing the income of farmers is through the marketing agreements and licenses authorized by the Agricultural Adjustment Act. Experience with such agreements and licenses during the past year indicates that under proper circumstances they may benefit producers substantially.

Marketing agreements have proved to be particularly useful in the control of surpluses and in the regulation of shipments. Surpluses can seldom be effectively controlled by marketing agreements and licenses without the participation of 100 percent of the industry. A number of attempts have been made to deal with a surplus problem through the cooperative organization of growers and handlers,

but it was seldom possible to obtain the support of the entire industry. In most instances from 15 to 20 percent of the producers refused to cooperate and were thus able to obtain substantial benefits under the program without sharing the costs.

In the season of 1933, for example, California's supply of Valencia oranges was so large that all of the larger marketing agencies and a number of individual shippers entered into a voluntary proration agreement. These agencies ship more than 90 percent of the Valencia crop. Despite the large percentage of the industry which was co-operating, it was found that the small minority outside the agreement shipped quantities considerably in excess of their proper proportion. In other words, this small minority profited by the sacrifices of the large majority. The experience under this voluntary agreement led the industry to develop a marketing agreement under the A. A. A. This agreement has been in operation since December 1933. Plans for national proration under a national citrus agreement are now going forward.

Officially approved marketing agreements have placed many programs on such a basis that all the groups concerned, cooperative and proprietary alike, must participate. Embodied in the terms of a blanket license, the essential features of the marketing agreement bind all the handlers or processors engaged in the industry. By this means the former noncooperators are kept from reaping more than their share of the benefits. Marketing agreements and licenses have thus made it possible for the growers of citrus fruits, walnuts, raisins, and other commodities to avoid the disastrous effects of unregulated supplies.

### Supply Control Features

Marketing agreements usually involve more than the simple term "agreement" may imply. Producers, processors, and handlers of farm products sometimes believe that simple agreements as to prices will increase the income of producers. Simple price agreements may work occasionally, but usually only for one producing season. Generally, marketing agreements require provisions for affecting supplies, either by regulating the movement to market or by eliminating part of the supply from commercial channels. In a measure the supply-control features of the marketing agreements correspond to the production-control features of the adjustment programs developed for the major crops. However, the agreements usually provide only for the control of supplies already produced and not for the control of new production.

Marketing agreements have dealt effectively with perishable commodities produced at great distances from consumer centers. In such cases transportation and handling costs absorb much of the terminal market price. In years of excessive supplies the wholesale price at consuming centers tends to fall below the handling and shipping costs. It is then possible for the producers and handlers, acting in cooperation, to control the movement of these products so as to avoid the demoralization of the markets. They can retain excessive supplies in the area of production and save handling and transportation costs, which would largely represent loss.

Many different methods of regulating market supplies have been developed in connection with marketing agreements. Agreements relating to fresh fruits and vegetables usually provide for a simple proration of shipments, sometimes coupled with a stricter control over the marketing of low-grade products. Methods must suit the particular industry. Frequently a careful regulation of shipments, so as to avoid alternate gluts and shortages, improves the net income of producers, without reducing total supplies to consumers. Farmers dislike to destroy or to refrain from marketing products which they have grown. Hence there is little danger that proration will restrict marketings excessively.

Supply-control features of some agreements divert a portion of the supply from the regular trade channels into byproducts. Such arrangements are now in effect for the walnut and raisin industries. The purchase of excess supplies for relief purposes, and their removal from commercial channels, have like effects.

Some agreements and licenses control prices paid to producers. To be effective in most cases such action must be coupled with some control over supplies marketed or over marketing and distributing practices. Wherever possible, the administration has avoided direct price fixing in connection with marketing agreements and licenses. Many of the early agreements, including those relating to peaches, olives, and milk, provided for fixed prices to producers and fixed resale prices. This involved the fixing of processing or distribution margins. Price fixing of this character necessitates either a satisfactory compromise as to the size of the margin or regulation of the spread in price between producer and consumer. Such regulation would require administrative machinery and procedure similar to that which the Interstate Commerce Commission has been developing for a generation. As a matter of fact, it is doubtful whether processing and distributing margins can be dealt with satisfactorily through marketing agreements. In most cases the A. A. A. will sponsor the direct control only of prices paid to producers, and not then unless price control goes along with some measure of supply control or regulation of market prices.

### The Milk Licenses

In the case of milk licenses, which provide for minimum prices to producers, the classification of milk according to its use, the equalization of sales opportunities and of surplus burdens among producers, and other protective measures are all interwoven with prices, and with the problem of increasing the income of milk producers. In most cases the minimum-price provisions of the licenses have been of direct value to producers by affording reasonable price stability and by protecting producers against the past practice whereby farmers bore the brunt of dealers' price wars. Under the licenses, prices may be so determined as to make for a reasonably compact milk shed without having any of the objectionable features of fixed territorial boundaries or certificates of necessity. For example, by requiring through a license that all distributors pay the same price for milk used for similar purposes, it is possible to remove the chief incentive which the distributor has to go out and develop new sources of supply when such supplies are not needed in the market. Fur-

thermore, by requiring that all distributors participate in a pooling plan for a particular market it becomes impossible for a group of producers either to undersell the market or to obtain higher average prices than are received by other producers similarly situated.

Experience in connection with milk licenses also indicates that the provisions of these licenses affecting practices in the distribution of milk have been quite important as a means of improving the income of producers. For example, each license provides for check-testing and check-weighing services, which are designed to protect producers against unscrupulous practices. In some cases the reduction or elimination of transportation or other handling charges have been directly reflected in higher net prices to producers without any change in wholesale prices. It has also been possible to give producers more protection against credit losses through nonpayment by financially irresponsible dealers.

### One Danger in Marketing Agreements

Some of the marketing agreements operate to raise prices by reducing the supply available for consumption. In these agreements there is frequently the danger, therefore, that those involved will make the same mistake that some urban industries have made—that they will curtail supplies excessively for the purpose of maintaining prices at too high a level. The nature of the farming business and the psychology of the farmers themselves are a partial safeguard against too great a restriction in volume. Furthermore, in the agreements which it has approved the Agricultural Adjustment Administration has taken great pains to avoid this unfortunate outcome. Nevertheless, it is to be expected that from time to time pressure will come from some agricultural groups operating under marketing agreements similar to that which is frequently exercised by certain groups interested in factory production.

### PROTECTION OF CONSUMERS

It is expressly stipulated in the Agricultural Adjustment Act that the interests of consumers shall be protected. Farm production shall be adjusted, the act declares, "at such a level as will not increase the percentage of the consumers' retail expenditures for agricultural commodities, or products derived therefrom, which is returned to the farmer, above the percentage which was returned to the farmer in the pre-war period August 1909 to July 1914." In other words, for the protection of consumers, the measure sets a limit to the level to which farm commodity prices may be raised by crop adjustments or marketing agreements.

While, as consumers, people naturally desire that prices of things they buy shall be low, it is important to recognize that the permanent public welfare, including the welfare of consumers, suffers when prices are forced down to levels not consistent with efficiency in production and distribution. During the depression, farm commodities were available to consumers at very low prices. This resulted mainly from a fall of farmers' returns far below the profit line. It did not mean a permanent lowering of consumer costs, and there was involved in it no reduction in the margins of processors,

distributors, or handlers. The reduction in consumer prices came almost entirely out of the farmers' returns. It was clear that, unless farm prices were brought back into balance with prices of goods bought by farmers, many farmers ultimately would be driven out of production, at which time consumers would have to pay unduly because of the resulting shortage of food. Consumers were suffering in another and more immediate way. The impairment of farm buying power caused unemployment in the cities and helped to bring about a general disorganization of the economic system. Thus the producer and consumer have both been victims of wide swings from surplus to scarcity, and of the extreme cycles of low and high prices.

The efforts of the Agricultural Adjustment Administration to raise the income of farmers in many cases involve higher prices to consumers. But so long as these increases are not diverted into non-farm channels and so long as the share of the consumers' dollar received by farmers is not greater than that received by them in the pre-war period, this does not conflict in any way with legitimate protection of the consumers' interests. On the other hand, the increased income received by farmers actually helps consumers because it means increased buying of city-made goods by farmers, increased employment, and increased business activity all around.

Consumers, in other words, derive their fair share of the general advantage that results from a healthy economic condition in agriculture which is based upon fair prices to farmers. Reasonable remuneration of agriculture for providing the Nation with its food and fibers is not a burden upon consumers so much as it is an assurance to them that efficient production at fair cost will continue.

### Interdependence of Farmer and Consumer

But just as there can be no more than a false or transitory advantage to consumers in ruinously low farm prices, there also is no enduring gain for agriculture in discriminations against the consumers. Farmers generally show a growing understanding that agriculture relies, for sustained progress, upon rising consumer buying power. This interdependence of farmer and consumer is a vital factor to be considered in planning all steps for economic recovery.

The Consumers' Counsel of the Agricultural Adjustment Administration has undertaken to provide protection for consumers under the provisions written into the Adjustment Act. Its work is a specific recognition of the mutual interests of farmers and consumers. Scrutiny of pending adjustment programs, marketing agreements, and codes from the point of view of consumer welfare, and examination of their economic effects on consumers, after they are in operation, are special functions of the Consumers' Counsel. The Consumers' Counsel represents the consumer interest in public hearings on agreements and codes, and advises the administration in the drafting of their provisions as they affect the consumer. It is important that provisions in marketing agreements and codes shall not be employed either openly or covertly to convey governmental sanction of excessive margins of processors and distributors, to widen spreads which already may be unjustifiable on economic grounds, or to disregard in any way the consumer or public interest in trade arrangements between organized producers and processors.

The Consumers' Counsel has proved increasingly useful in its functions. It has protected consumers by giving publicity in instances where efforts were made to pyramid processing taxes and so to make these taxes an excuse for profiteering under cover of adjustment programs undertaken by the Administration in the interests of farmers. As a matter of routine, the Consumers' Counsel tabulates and makes public information on the current consumers' prices of farm goods, and the relationship between those prices and the farm prices for the same commodities. In general, though the Consumers' Counsel is new and experimental, it may be said in all its work to emphasize usefully a very important principle—that recovery is not simply an affair of monetary gains, but that such gains must be translated into real income for the community as a whole.

### PROCESSING TAXES

Few, if any, taxes have been popular. But most of us realize that if we abolished taxes we should at the same time abolish police protection, public schools, public roads, and many other necessary things. If we abolish the processing taxes, with nothing to take their place, we shall have to abandon our efforts to balance farm production with the market demand under the Agricultural Adjustment Act.

What actually happened to farm prices, to city retail prices and to processors' and dealers' margins after the processing taxes went into effect? Preliminary studies made in the Department of Agriculture were reported in *Agricultural Adjustment: A Report of Administration of the Agricultural Adjustment Act, May 1933 to February 1934*. Preliminary studies made by other research organizations have appeared in technical publications such as the *Journal of Farm Economics*. Such studies, though as yet incomplete, agree in their general conclusions.

They indicate—

(1) That the margins of processors and dealers (the spread between the prices they pay to the farmer and the prices they charge to the consumer) have been generally widened just about enough to cover the payment of the processing taxes and other increased costs, such as higher wage levels. There is little evidence of pyramiding except in a few industries and over short periods. Thus, the only possible loss sustained by processors and middlemen on account of the crop-adjustment programs is from a reduction in the amount of their business.

(2) That, considering the combined effects of reduced production, the collection of the processing taxes, and the payment of benefits to farmers, the net result has been to increase prices paid by consumers and to increase the incomes (including market prices and benefit payments) received by farmers cooperating in the adjustment programs.

### Effects Upon the Consumer

City retail prices of food from the low point in March 1933 to June 1934 rose 20 percent. Not all of this rise resulted from the processing tax-production adjustment program. Part of it was due to short crops of wheat and potatoes, part to the devaluation of the dollar and the resulting rise in the prices of export commodities, and

part to an improvement in consumer buying power. During this same period pay rolls in manufacturing industries went up much more than did food prices. Similar comparisons based on other months give the same general conclusions—that incomes of wage earners in the cities have increased more than have the prices of foods.

The wheat tax of 30 cents a bushel represents about three-fourths of a cent a pound of flour which sells in city stores for about 5 cents, or about one-half cent on a pound loaf of bread costing the consumer an average of 8.9 cents on August 14, 1934. The cotton tax of 4.2 cents a pound represents about 8 cents on a pair of overalls costing \$1.60; less than 8 cents on a sheet costing \$1.30; about  $3\frac{1}{2}$  cents on work shirts costing 90 cents; or about 1.1 cents on a yard of unbleached muslin selling for 14 cents. The hog tax of \$2.25 represents about  $4\frac{1}{2}$  cents on a pound of retail pork cuts. The Bureau of Labor Statistics reported that on August 14, 1934, sliced ham cost consumers an average of 39.6 cents; picnics, 15.6 cents; loin roast, 20.6 cents; sliced bacon, 29.8 cents; and lard, 11.3 cents. It will be seen that in all cases the processing tax accounts for only a small part of the prices paid by consumers for farm products.

Two provisions in the Agricultural Adjustment Act protect the consumer against excessive increases in food prices. The use of processing taxes, production adjustments, and benefit payments is limited (1) to restoring the purchasing power of farm products to the pre-war relationship, and (2) to restoring to the farmer the pre-war percentage of the consumers' dollar. These provisions are a definite safeguard against any unfair or exorbitant increases in the prices of food or other agricultural goods as a result either of processing taxes or of production adjustments. Moreover, the city worker will benefit indirectly but surely from an improvement in the farmers' buying power.

### High Cost of Doing Nothing

Farm readjustments could be made without benefit payments, and therefore without the use of processing taxes, if we were willing to pay the price. From past experience, however, we may be sure that, unless the farmers were helped or forced to make such adjustments, they would be made too slowly. Meantime, hundreds of thousands of farm families would be pauperized, and the depression in both town and country would be indefinitely prolonged. One possible method of bringing back a desirable balance between production and consumption would be a policy of not interfering with the working out of economic laws. If the prices of wheat, cotton, hogs, and other agricultural commodities fell low enough and stayed low long enough, many farmers would be forced to give up their farms. This would reduce production. Thus a balance between production and consumption would gradually be brought about without any assistance from the Government. But thousands of farm families would be left destitute if the Government adopted the policy of not interfering.

Instead of leaving necessary adjustments to the individual farmer, the Government might compel him to make them, or might penalize a refusal to make them. It might license all farmers and regulate

their acreages and the number of their farm animals. This would be a direct attack on the problem, which might bring about necessary readjustments in a short time. It is doubtful, however, whether farmers would accept such compulsory regulation, except as a last resort. Compulsory regulation should not be attempted if readjustments can be accomplished through voluntary cooperation. In no case should it be attempted unless practically all farmers want it.

The farmer who is not willing to cooperate in production adjustments might be penalized by taxes or by other means. This would not amount to compulsory regulation. No farmer would be compelled to adjust his production. But the penalty for declining might be so severe that he would prefer to make the necessary adjustments.

The principal method followed up to the present is that of voluntary cooperation, with the payment of benefits to the cooperator. It is supplemented this year, in the cases of cotton and tobacco, by penalties on the noncooperator. Processing taxes are the only source of revenue from which the benefit payments are made. If processing taxes should be abolished, no substitute being provided, there could be no benefit payments. The whole adjustment program would be at an end. Critics of the processing taxes have not suggested any other means of financing the adjustment of production. Some alternative must be found before we can consider dropping the processing taxes.

### Some Advantages of Processing Taxes

The processing taxes have advantages over other kinds of taxes.

They are easy and inexpensive to collect and difficult to evade. The revenue obtainable can be forecast with a high degree of accuracy. It is doubtful if any other form of tax would offer as sure and steady a source of revenue. Furthermore, the processing taxes apply only to the domestically consumed portion of the products taxed. They do not penalize the exporter. The farmer is not taxed on his production of foods processed for his own use. Also, the rates of the processing taxes can be easily and quickly adjusted to meet changing market conditions. Such flexibility would be difficult to achieve with other methods of getting revenue.

In the case of hogs, the processing tax tends to penalize the noncooperator. Unless supplies are reduced it falls, to some extent, at any rate, on the producer. The cooperating farmer receives compensation in benefit payments. The noncooperator, of course, does not. And in addition, he has to wait until the market supplies are reduced by the adjustments of cooperating farmers before getting any relief in the shape of higher prices.

### Some Disadvantages

There are also some disadvantages in the processing taxes.

Some economists maintain it is wrong to tax raw materials and contend that the tax should be imposed only on finished goods. They believe a tax on raw materials is pyramided, so that prices to the consumer are raised by much more than the amount of the tax. But, as was said earlier, there is very little evidence of any general pyramiding of the processing taxes.



The processing taxes may tend to lower the prices of some farm products below the levels which might exist if the adjustment program were financed by some other means. But this may induce more farmers to cooperate in production adjustments. Benefit payments and adjustments of production furnish adequate compensation.

Perhaps the most common objection to the processing taxes is that they increase retail prices. Studies indicate that practically all the wheat processing tax and most of the cotton processing tax pass to the consumer in the form of higher retail prices. Heavy Federal purchases of hogs were necessary when the hog processing tax first went into effect to sustain the market price of hogs so that the tax would not fall mostly on the producer. With reduced supplies resulting from the adjustment program, the tax is now being shifted to the consumer without the support of Federal buying in the market.

Wherever the adjustment program is successful, it will mean either higher retail prices or a decided reduction in the charges of dealers and processors. These intervening charges are very high, and means to reduce them should be sought. But the problem is difficult and complicated. So far no one has proposed a workable plan for a general reduction of the costs of transportation, processing, and marketing. Meantime the only way of increasing farm prices is through the increase of city retail prices. Fortunately a moderate increase in retail prices generally means a substantial increase in the prices received by farmers. Prices high enough to make farming pay are necessary. Such prices should not involve any injustice to the consumer.

### The Most Serious Objections

The most serious objection to the processing tax, and one which merits careful consideration, is that the greatest burden falls on the poorer people. This is an important and legitimate criticism of the processing taxes. It should be remembered, however, that in proportion as the farm adjustment succeeds it will stimulate urban employment. This will furnish an important offset to any rise that may take place in the cost of living.

It might be possible to obtain the revenue necessary for benefit payments either by increasing the rates of existing Federal taxes or by providing for some new form of tax. Two possible sources of revenue would be: (1) an increase in the rates of income taxes and (2) a sales tax applied either to all commodities or to a group of commodities which might be classified as luxuries. If provision were made for financing benefit payments either from increased income taxes or from a general sales tax, the program would not be so great a burden on poorer people as is the processing tax.

Another source of revenue would be a tax on the profits of processors and distributors of farm products, or possibly a general tax on the profits of industrial concerns. It would be difficult for middlemen to avoid a substantial part of the burden of such a tax and it probably would have a tendency to reduce middlemen's charges and to bring about a narrower spread between the farm prices and the city prices of some commodities. Theoretically there is merit in such a tax. Practically, it would be difficult to work out satisfactorily. The income which might be obtained would be uncertain and would vary greatly from year to year.

### Alternatives Should Be Considered

However, there should be careful consideration of possible alternatives to the processing taxes. There may be other possible methods in addition to those above outlined. The ideal requirement is a method which will provide adequate and sure revenue, which will be easy and inexpensive to administer, and which will not unduly burden consumers of low income.

### FARM REAL ESTATE TAXES

Measurable relief from taxes came to agriculture in 1933, and 1934 promises additional relief. Farm real estate taxes reached a peak in the United States in 1929. In that year the average tax per acre for the country as a whole was 58 cents. This may be compared with an average of 24 cents in 1913. After 1929 the average farm realty tax per acre began to decline. In 1932 it stood at 46 cents, or 21 percent below 1929. Between 1932 and 1933 there was an additional reduction of about 6 cents an acre, judging from data already assembled from 23 States. Probably the average tax per acre for 1933 was about 39 cents, or 33 percent less than it was in 1929.

Naturally the tax reduction varied by States and regions. In California, for example, average farm real estate taxes per acre decreased from 94 cents in 1932 to 65 cents in 1933. On the other hand, in Mississippi the tax increased from 52 cents to 55 cents. Generally, the greatest reductions took place in the far Western and Middle Western States. Part of it resulted from a curtailment of social services and from salary cuts. In some States public borrowing permitted tax reductions. Farmers in many States obtained partial relief from the general-property tax through State laws providing revenue from other sources.

Nine States in 1933 allocated the proceeds of sales taxes to the support of public schools. Two States diverted to the schools the proceeds from increases in taxes on gasoline and lubricating oils. Three States provided that all or part of the revenue from newly levied income taxes should be devoted to the public schools. Federal funds to supplement teachers' salaries became available in 1934. Possibly farm taxes would have been reduced without this State and Federal assistance to the schools, but the rural school system would have suffered. Because the aid was forthcoming, the proportion of the total cost of government borne by the general-property tax was reduced.

Besides benefitting from a reduction in the amount of their taxes, farmers benefited from a decrease in the burdensomeness of the charges. They had more income with which to pay. Individual taxpayers find taxes bearable or not as their income varies. Hence the better measure of farm-tax burdens is not the amount levied per acre but the proportion that the taxes constitute of the gross farm income. Between 1932 and 1933 the gross farm income per acre increased more than 20 percent, while at the same time the real-estate tax per acre decreased between 10 and 15 percent. Hence the tax per \$100 of gross income in 1933 was only about two-thirds what it was in 1932 and about the same as in 1930.

### Farm Aid Through Taxation

Farm taxation, however, is only a part of the broader field of public finance. In the last year and a half farmers have seen this fact emphasized in ways to their advantage. They have had good reasons in the past to complain about the distribution of tax burdens. Excessive dependence on the general-property tax by State and local governments has frequently hurt them. Under new Federal legislation, notably the Agricultural Adjustment Act, taxation furnishes direct benefits to agriculture. Revenue for the rental and benefit payments which last year increased the gross farm income by one-fifth came from processing taxes. Benefit resulted to agriculture also from another change in public finance, namely, monetary devaluation, which raised prices and redistributed wealth to the farmers' advantage.

Federal expenditures, dependent as the last resort on taxation, benefited agriculture by relieving unemployment. Food and work furnished to the unemployed increased consumption and helped to raise farm prices. Federal funds for these purposes did not involve any increase in direct taxation of agriculture, since they did not come from taxes on general property. Federal, State, and local policies reduced farm-tax burdens during 1933 and 1934 in three distinct ways. They reduced tax charges absolutely, raised farm prices, and thereby enhanced the farmer's power to pay the remaining taxes, and tapped new sources of revenues for direct and indirect agricultural relief.

### COTTON

When the Agricultural Adjustment Administration initiated the cotton-adjustment program in 1933 cotton was selling at about 6 cents a pound on the farm. The world supply of American cotton was about 26,000,000 bales, and had been near that record level for 2 years. Furthermore, cotton acreage had increased tremendously. Many farmers had no other cash crops to which they could turn, and low returns from cotton impelled them to increase their production in order to meet, as nearly as possible, their cash expenses incident to production and living. Labor drifting from the cities to the cotton States also strengthened the impulse to grow more cotton. As the season advanced, it became evident that the large acreage and good growing conditions would result in a big crop. Had cotton reached maturity on the entire acreage planted the output would have exceeded 17,000,000 bales. The world's supply of American cotton would have been more than 29,000,000 bales. The cotton-adjustment program for 1933, therefore, aimed to withdraw 10,000,000 acres from production, or the equivalent of 3,000,000 bales. A considerably greater adjustment was desirable and would have been attempted had circumstances permitted. Actually the program resulted in a withdrawal from cotton production of 10,500,000 acres, on which area average 1933 yields would have given 4,500,000 bales.

For withdrawing this land from production, 1,032,000 producers received from the Government approximately \$112,600,000. They also received options on a quantity of Government-owned cotton, on which they made a profit of more than \$50,000,000. The 1933 cotton crop was limited to 13,047,000 bales, and the world's supply

was reduced from 26,000,000 to 24,600,000 bales. This adjustment, with an improvement in the demand for cotton and with the reduction in the gold content of the dollar, raised the average farm price of cotton for the 1933-34 season to 9.7 cents per pound, as compared with an average of 6.5 cents per pound received for the 1932-33 crop. The farm value of the 1933-34 crop was \$717,007,000, as against \$483,912,000 in 1932-33. Including benefit payments and profits on options, the gross farm value of the 1933-34 crop was nearly \$880,097,000.

After a series of meetings with farmers and others interested in the price and production of cotton, the Agricultural Adjustment Administration formulated a program for 1934 which called for an acreage reduction of approximately 40 percent of the average acreage planted to cotton during the period 1928-32. The campaign was launched in January 1934, and approximately 1,000,000 producers contracted to keep roughly 15,000,000 acres out of cotton production. The reductions constituted about 38 percent of the base acreage of the cooperating producers.

### Payments to Producers

Payments to producers, as compensation for this reduction, were of two types. There was a rental payment amounting to 3½ cents per pound on the average per acre yield of the land taken out of production, and a parity payment, guaranteed to be not less than 1 cent a pound on the domestically consumed proportion of the base production. The domestic consumption of cotton during the base period, 1928-32, averaged 40 percent of the production. The contracts stipulated that managing share tenants should receive half of the rental payment, and that all tenants, including croppers, should share in the parity payments to the same extent that they shared in the crop. The total rental payments will be about \$90,000,000 and the parity payments around \$27,000,000, giving a total compensation from the Government to the farmers for the 1934 cotton acreage reduction of something like \$117,000,000.

During the course of the 1934-35 sign-up campaign legislation was introduced in the Congress for the purpose of making compulsory the cooperation of all cotton producers in production-adjustment programs. This legislation seemed to meet with widespread support among cotton farmers, particularly contract signers. The Secretary of Agriculture, in order to ascertain the true sentiment of cotton producers, sent out more than 40,000 questionnaires in January 1934 to representative cotton producers requesting their opinion regarding legislation then pending in Congress designed to limit within an estimated market demand the quantity of cotton that could be ginned and sold in any one year.

The results of the questionnaire survey indicated that an overwhelming majority of cotton producers favored compulsory control of production. Congress passed the Cotton Act, commonly known as the Bankhead Act, on April 21, 1934. It represents a plan that met with the approval of the majority of cotton producers heard from in the questionnaire survey. The measure is effective for 1 crop year, from June 1, 1934, to May 31, 1935, and for a second crop year should the President find that a continuation of the emergency

requires it and that the Secretary of Agriculture finds that two-thirds of the cotton producers favor it.

Specifically, the Bankhead Act provides that 10,000,000 bales (500 pounds net weight) may be ginned free of the ginning tax in the crop year 1934-35. This amount of tax-exempt cotton is allotted to individual farms on the basis of the production history of each farm. The act also exempts cotton of 1½-inch staple length and cotton produced on publicly owned agricultural experiment stations. Other cotton above the 10,000,000-bale exemption is subject to a tax of 50 percent of the average central market price of ⅞-inch Middling spot cotton. In any case, the tax is to be not less than 5 cents per pound.

As a result of the voluntary adjustment and of action under the compulsory features of the Bankhead Act, approximately only 28,000,000 acres were planted to cotton in 1934. Low yields on this reduced acreage produced a crop estimated in October at 9,443,000 bales. The world supply of American cotton for the 1934-35 cotton marketing year will be below 20,000,000 bales, as contrasted with 26,000,000 bales when the adjustment programs started. The changed supply position caused a sharp advance in cotton prices. In August 1934 the farm price averaged 13.1 cents a pound.

### A Long-Time Cotton Program

In a program designed to increase the returns of American cotton growers, not merely for a single season but for a long period, it is necessary to determine the point to which cotton prices may be raised without unduly stimulating foreign competition. Cotton production in this country has been developed to meet the demands of the world market. Ordinarily we sell more than half our crop abroad. Loss of this foreign market would force cotton growers to cut their acreage to less than half its normal size. In formulating the adjustment program for 1933 and for 1934 the administration did not ignore the possible effect on foreign competition. With an immense carry-over in existence, however, the danger of causing important foreign expansion was not imminent. Acreage reduction in the United States was appropriate for 1933 and for 1934. But it is obvious that a policy based on the existence of a large surplus may need to be changed as the surplus disappears. In what manner and to what extent our cotton production should be adjusted to the supply situation as it now stands should be carefully considered.

More than 50 foreign countries grow cotton, and their producers react to price changes just as ours do. In the period 1921-25, when bollweevil damage in this country threw doubt on our ability to continue supplying the world demand, foreign cotton acreage, excluding that of Russia, rose from 28,200,000 acres to about 40,800,000 acres or 45 percent. A part of that increase would have occurred, even with normal crops in the United States, since the depression and low prices of 1920 and 1921 resulted in an acreage in foreign countries in 1921 somewhat smaller than in the years immediately preceding. Following the price slump of 1929 foreign acreage declined, but it was increased by more than 4,000,000 acres in the 1933-34 season, when it was the largest on record. However, the estimated 1933-34 foreign acreage excluding Russia, whose marked expansion in cotton acreage under the Soviet Government has been

independent of the movement of prices in the markets of the world, was somewhat less than the previous peak. Early reports indicate that there was probably a further increase in foreign acreage from which the 1934-35 crop is being harvested. There are possibilities for substantial cotton-acreage expansion in India, Africa, Russia, China, and South America, and the extent of the expansion which occurs will depend to a considerable extent upon prices.

### Foreign Competition Should Not Be Overemphasized

American growers should bear these facts in mind, without overestimating their significance. They do not warrant a return to unregulated production in order to hold this country's position in the world market. Foreign cotton production, in many countries, meets with great difficulties of climate, soil, labor, and transportation. Cotton production cannot be expanded very rapidly in these countries. It is easier for the United States than for the competing countries to adjust the output of cotton to a rising demand. No single large area anywhere else in the world is so well adapted to cotton production as the southern part of the United States. Our natural advantages in the production of this crop do not vanish when we eliminate the irregularities of supplies and adopt a program of production control. Production control is not a matter of rushing from one extreme to the other—but simply of continuing to adjust the production to the demand, foreign and domestic.

Specifically, the problem is to ascertain, as nearly as possible, the quantity of cotton that will give the best net return—not for 1 year or for 2, but for a long time. By curtailing production very greatly, we could temporarily raise the price of cotton to a high level. Simultaneously, however, this would encourage foreign competition. Opinions vary as to the price that would strongly stimulate foreign expansion. Much depends upon the value of the dollar relative to gold and to the currencies of other countries, and upon the price of cotton as compared with the prices of alternative products and with costs of production.

Up to the present the American cotton policy stands justified by its results. Foreign countries produced more cotton last year than they did the year before, but a large part of the increase would have occurred regardless of the cotton program in the United States, as most of the 1933-34 foreign crop had already been planted before our program was even decided upon. The prosperity of the American growers has been enormously enhanced by the adjustment programs conducted during the last 2 years, because these programs have helped to correct an unbalanced supply position. It does not follow that still more prosperity could be gained by creating an artificial shortage.

We wish to retain our foreign market; and this means that we must continue to supply it at moderate prices. But we do not wish to keep prices ruinously low on the assumption that any improvement through the elimination of the surplus will cause a loss of our foreign markets. We must not, therefore, permit an increase in foreign production to stampede us back into overplanting. Our cotton policy has succeeded thus far because it operated to make an adjustment to the demand. That is the formula for its success in

the future. It will be more difficult to apply, now that the problem is to steer between extremes. The principle, however, remains unchanged.

## WHEAT

In the wheat adjustment, two elements are equally important—the cooperation of American farmers and the foreign response. This country produces wheat partly for the world market. Normally, therefore, the world market determines the price both for the wheat exported and for the wheat consumed at home. In exceptional circumstances, such as those that have prevailed during recent years, the American price may rise above the world price. But this is a wholly abnormal relationship, which could not endure if a normal crop were sold in the usual way. Ordinarily we have a substantial surplus for export, and as long as that condition continues it is necessary to combine the adjustment of production at home with an effort to obtain supporting action abroad. The United States could not assume the entire burden of bringing world wheat production into line with the world demand. Without exports, we would have to reduce wheat acreage to about 75 percent of our previous average acreage, and that is a greater permanent reduction than it seems desirable to make. Furthermore, this action would not suffice for the world readjustment unless other countries took themselves in hand.

Accordingly, the Agricultural Adjustment Administration coupled its program for adjusting the American wheat acreage with an attempt to enlist the cooperation of other countries, both exporters and importers of wheat, in a world adjustment. Such an adjustment is possible. Taking the world as a whole, yields of wheat are remarkably stable from year to year, despite annual variations in the yields of different countries. In other words, in the long run man is a very important factor in determining the production. The acreage as well as the weather is a governing factor. In recent years the world's wheat acreage has increased in spite of a declining world demand. Exporting countries and importing countries alike have an interest in promoting a more rational adjustment. This common interest found expression in the international wheat agreement of 1933, in the negotiation of which the United States took the initiative. Under the terms of this agreement, exporting countries accepted export quotas for the 1933-34 crop season and undertook to restrict their production in 1934, while importing countries promised not to encourage further wheat expansion within their own borders and to diminish their import restrictions as wheat prices advanced. The arrangement, a logical counterpart of our acreage adjustment, encouraged the hope of effective world cooperation.

### Influence of Weather Conditions

Unfortunately weather conditions in both hemispheres upset all calculations last year, and to a still greater extent this year. Seasonal conditions do not affect the logic of acreage adjustment for the long pull, but they may seriously interfere with immediate action. Drought in the United States reduced the 1933 wheat crop to less

than 528,000,000 bushels, as compared with 932,221,000 bushels in 1931. On the other hand certain other countries, notably Argentina, had unexpectedly large crops, while France, Germany, and Italy, had phenomenally large crops for the second year in succession. This change in the situation prevented universal adherence to the export quotas fixed in the international agreement. Argentina would have had to denature a large part of its crop in order to comply with the pact, which required a reduction of shipments without any increase in the carry-over. Argentina declared itself unable to do this, and requested a readjustment of the quota. It proved impossible to reach an agreement before Argentina had to begin seeding wheat for the 1934 crop. In consequence Argentina has not made the promised adjustment in production for 1934.

But the agreement was successful in that wheat acreage in 1934 dropped not only in the United States but in Canada and Australia, and even to a slight extent in Argentina. Certain wheat-importing countries, including Italy, France, and Germany, reduced their acreage likewise. France and Italy conducted reduction campaigns, and France passed acreage-restriction laws. The influence of all these reductions combined, however, was negligible in reducing production, as compared with the influence of unfavorable weather in many countries. In 40 countries of the Northern Hemisphere, the estimated wheat production for 1934 is only 2,878,768,000 bushels, as compared with 3,149,007,000 bushels in the same countries last year. In the United States the crop was below 500,000,000 bushels, the smallest in 40 years. It fell over 100,000,000 bushels below domestic requirements, and foreshadowed a reduction of our domestic carry-over to normal by the end of the 1934-35 marketing season. This tremendous change in the supply position naturally lessens the immediate need for acreage adjustments, and makes world cooperation toward that end more difficult to achieve.

Elimination of the wheat surplus in the United States by 1935 is a possibility. Acreage adjustments and the weather have done in 2 years the larger part of a job that seemed likely to take 5 or 6. In consequence, wheat prices have risen. The average farm price in the United States in September 1934, was 92.2 cents a bushel, as compared with 32.9 cents in January 1933. But rising prices do not benefit farmers with little or nothing to sell. There is more calamity than benefit in the adjustment of supplies through drought. Yet acreage tends to rise if prices do, and acreage adjustment will be more difficult than it was before the surplus disappeared. Continued restriction of the American wheat acreage will be justified if competing countries likewise recognize the need for acreage adjustments, but not otherwise.

### Limitations of Reduction Policy

Only by putting our wheat industry completely on a domestic basis could farmers get permanent price gains through acreage restrictions alone. Putting it on a domestic basis would be very difficult; for temporary price gains would tempt farmers back into large production for export. Lacking world cooperation, the United States will have to reconsider its whole wheat program, and possibly to contemplate renewed production for export at highly competitive



world prices. Within the United States returns to wheat farmers could be maintained above the world level, through making adjustment payments under the Agricultural Adjustment Act. Now that the wheat surplus of the depression period has disappeared, we must adjust the production with an eye to the whole situation, both foreign and domestic, and should not commit ourselves to a program of indefinite restriction, regardless of conditions abroad.

Within the United States the wheat-adjustment campaign has definitely increased the income of wheat farmers. Through processing taxes, the plan has paid its way. Growers have done their part, and the administration has distributed among them adjustment payments totaling more than \$98,600,000. This sum was due on the 1933 crop, in accordance with the terms of acreage-reduction contracts. It was paid in two installments. In 1933 a sign-up campaign brought the growers of nearly 80 percent of the Nation's wheat into cooperative production adjustment. They undertook in 1934 to reduce their acreage by 15 percent from the 1930-32 acreage, and by 10 percent in 1935. The contracts covered 585,000 farms, aggregating over 52,000,000 acres, or 80 percent of the average wheat acreage in the years 1930, 1931, and 1932. Participating farmers withdrew more than 8,000,000 acres. Other farmers, however, increased their wheat seedings, so that the net reduction in seedings was approximately 7,000,000 acres.

Under ordinary conditions this reduction in acreage would have reduced the season's crop by at least 85,000,000 bushels. Drought of extraordinary extent and severity overshadowed the acreage reduction, and caused a far greater reduction in actual outturn. Under the adjustment program the return from wheat to cooperating farmers is the market price plus the adjustment payment. For the 1933 crop the farmers received average prices which, with the adjustment payments, brought returns for the domestically consumed portion very close to parity. The short crop of 1933, from which only 368,000,000 bushels were marketed, brought a cash income of \$267,000,000 exclusive of the adjustment payments. The much larger crop of 1932, from which about 524,000,000 bushels were marketed, brought a cash income of about \$195,000,000. This is an excellent illustration of the fact that moderate crops tend to bring in more money than do very large crops. It emphasizes the necessity of continued adjustment. From the still smaller 1934 crop, the growers will get about as much or more than they got from the 1933 crop. The adjustment payments will be unaffected. These payments constitute partial crop insurance. The adjustment checks are the only income some growers will receive in 1934.

#### Adjustment Payments For 1934-35

For the 1934-35 crop year the administration will make adjustment payments on the same basis as it did this year. These payments will total not less than 29 cents per allotted bushel. The acreage reduction required will be 10 percent of the base acreage, and the wheat-processing tax will remain at 30 cents a bushel. Probably the adjustment machinery will work better. Farmers have the necessary organization. They understand the program, and have acquired administrative experience. In 1934 they organized 1,400 local pro-

duction control associations to administer the adjustment plan in 1,757 counties. Cooperating with Federal and State officials, they put through 585,000 contracts so efficiently that only 1,413 remained unsettled on September 15, 1934. Most of these unsettled cases reflect unforeseen circumstances or legal complications. There have been very few willful violations of the contracts. There should be even fewer administrative difficulties in the future.

Nothing that has happened this year detracts from the value of the wheat adjustment. True, drought has reduced the output far more than the acreage cut alone would have done, and has emphasized the need for reserves against crop failure. It has not changed the logic of adjusting production to the probable demand. Adjustment as such remains a desirable condition, though it may come about in undesirable and painful ways. Had wheat acreage not been curtailed by the acreage reduction, the 1934 crop would have been somewhat larger; but the growers would have been worse off. As things were, many farmers received more income from each acre withdrawn than from each acre seeded. In the sections hardest hit, production would have been practically no greater had all the land been seeded to wheat, and forage production would have been less. The adjustment program furnished important crop insurance to producers while from the standpoint of the consumer it left the situation not greatly changed. There is enough wheat in the country for domestic consumption, but the surplus has been eliminated.

## CORN AND HOGS

For several years prior to the passage of the Agricultural Adjustment Act corn and hog producers in the United States far oversupplied the demand for their goods. They had in corn about 15 million acres above reasonable requirements. They were sending to market annually millions of hogs more than the market could absorb at remunerative prices. Foreign takings of our hog products had declined so much more than our production that from seven to eight million hogs, which previously would have gone abroad annually, had to be sold in the domestic market. As a result the purchasing power of corn and hogs was less than half the pre-war average. It was too late, when the Adjustment Act was signed, to prevent another overplanting of corn. Moreover, a spring pig crop 4 percent larger than that of 1932 had been farrowed. But unfavorable weather over part of the Corn Belt indicated that the corn crop would probably be small. It was therefore not imperative to act immediately for reduction of the corn output. In the case of hogs, on the other hand, the situation in 1933 called for immediate action.

The increased number of hogs already farrowed and in the fattening pens, and the comparatively larger number of sows already bred for fall farrowing, foreshadowed heavy production. The June 1 pig survey showed a 13-percent increase over 1932 in sows bred to farrow in the fall. Accordingly, after consulting representatives of the corn-hog producers, the Agricultural Adjustment Administration launched an emergency program to reduce pig and sow numbers. In August 1933 it began buying pigs weighing from 25 to 100 pounds under a schedule of minimum prices, and also sows weighing not

less than 275 pounds and due to farrow, at their regular daily prices for packing sows on the animal's full weight plus a bonus of \$4 a head. In a buying program extending through September the administration purchased 6,188,717 pigs and 223,247 sows due to farrow. Many packing concerns at 80 points acted for the administration in these transactions. About 1,833,650 head of the pigs were large enough to process into meat. The lighter pigs yielded fertilizer, tannage, and inedible grease. Meat obtained from the heavier pigs and from the sows totaled more than 100 million pounds. It was distributed to needy families through the Federal Emergency Relief Administration.

This emergency program reduced market supplies of hog products for the 1933-34 season by more than 1 billion pounds, or about 10 percent of the average annual production. Toward the end of 1933 and during the early part of 1934 the Federal Surplus Relief Corporation purchased directly about 1,400,000 live hogs and approximately 100 million pounds of lard and cured products. These operations helped to keep hog products on a higher level through the winter and spring of 1933-34 than they would otherwise have held.

### More Permanent Program

Then the administration considered a more permanent corn-hog program. In the past the gross value of the corn crop has been greatest in years of production 10 to 20 percent below the average normal. This fact, together with changes in the corn-hog situation in recent years, made it desirable that corn production for the United States as a whole in 1934 should be reduced 15 percent or more below the average for the 2 preceding years. In hog numbers a reduction of approximately 20 percent seemed desirable. The administration called these facts to the attention of producers and in consultation with their representatives drew up an adjustment program. It was improbable that all producers would participate. Therefore, in order to obtain the desired adjustment, the administration offered the growers a contract requiring the individual signer to reduce his corn acreage by 20 percent and his hog production by 25 percent. The contract was ready early in 1934, by which time county and community committees of producers had been organized to facilitate local administration of the work.

Approximately 1,160,000 producers, representing all the States, signed the contracts. In the Middle West, where the bulk of the commercial supplies of corn and hogs are grown, the contracts covered from 75 to 85 percent of the average annual production. On the acreage withheld from corn production, participating producers received payments from the Government at the rate of 30 cents a bushel on the estimated yield. For the reduction in hog numbers they received \$5 per head for each 3 out of 4 head of hogs raised on the average from litters farrowed during the 2-year base period, December 1, 1931, to December 1, 1933. As in the case of the cotton-, wheat-, and tobacco-adjustment programs, funds for the corn-hog production payments came from processing taxes.

The 1934 corn acreage was materially reduced below the 1932-33 acreage. According to the July crop report it totaled 92,526,000

planted acres—12.3 percent below the 2-year average. The acreage reduction in the North Central States was 18 percent of the 2-year average. However, the acreage reduction reduced corn output far less than did the drought. Corn production in 1934 dropped more than a billion bushels below the annual average of about 2,600,000,000 bushels. Only about 300 million bushels of the decrease can be attributed to the average-reduction contracts.

### Factors in Corn-and-Hog Income

Income from corn and hogs depends on several important variable factors, the separate influence of which cannot be accurately measured. Adjustments in supply are, of course, important. But there are other important factors, such as processors' and meat distributors' margins, marketing costs, consumers' incomes, and consumers' expenditures for pork and lard. On a given level of purchasing power, consumers as a group tend to spend annually about the same percentage of their incomes for pork and lard. In other words, their consumption of hog products varies inversely with the prices. On the other hand, the total amount of money taken for processing, distribution, and transportation varies directly, within reasonable limits, with the volume of hogs marketed. These conflicting tendencies complicate the problem of reckoning the specific influence of the supply adjustment. It must be remembered, too, that the early sale of pigs and sows saved about 70 million bushels of corn. The closest reckoning that can be made indicates that the net benefit of the emergency and supplemental-purchase programs substantially exceeded their costs.

Essentially the emergency program was a price-supporting and not a price-raising measure. It did not immediately bring about hog-price gains. It is extremely probable, however, that without the emergency program hog prices during the winter and spring of 1933-34 would have been below the extremely low price of December 1932. Marketings in November and December 1933 and January 1934 were very heavy, yet prices did not show more than an expected seasonal decline. It is not yet possible to estimate, with any approach to accuracy, the economic effects of the 1934 adjustment in corn and hog production. Not until the crops of hogs and corn of that period have been sold will it be practicable to figure out the results. Present indications, however, are that the benefits will be very substantial.

For example, the total cost of hogs to packers operating under Federal inspection was greater during the first half of 1934 by about \$80,000,000, or 37.7 percent, than during the corresponding period of 1933. This cost figure included the processing tax which processors paid on all hogs slaughtered. The slaughter tonnage in the first half of 1934 was smaller than in the first half of 1933 by about 500,000,000 pounds, or 8.6 percent. For fewer hogs farmers received substantially more. In the first 6 months of 1934 the cost to packers per hundredweight of hogs slaughtered was \$5.60, as compared with only \$3.72 in the corresponding period of 1933. It should not be forgotten that the proceeds of the processing taxes went to producers in payments on their reduction contracts.

### Supplementary Benefits of Adjustment

Besides improving the supply position and raising corn and hog prices, the adjustment programs yielded important supplementary benefits. Much of the acreage withdrawn from corn went into forage crops which resisted the drought better than corn would have done, and provided additional feed. Moreover, the emergency pig and sow program reduced hog production in advance of the drought. Hence it enabled farmers to carry forward to the 1934 and 1935 feeding seasons a considerable supply of corn that would otherwise have been consumed. In an unexpected manner, therefore, the emergency program forwarded production adjustment in the most constructive sense of the term. By conserving feed it mitigated the excessive influence of the drought upon hog production and shortened the swing of the pendulum. Also in areas where crops were almost completely wiped out and the livestock had to be sold, the reduction payments became crop insurance.

In October the Agricultural Adjustment Administration conducted referendum meetings to ascertain the views of producers as to the advisability of continuing the corn-hog adjustment through 1935. Forty-five States were represented in the voting. Approximately 69 percent of the farmers who voted declared themselves in favor of a follow-up program. Accordingly the Administration decided to offer a new plan as soon as the necessary provisions could be worked out. The plan will probably follow the general outline of the 1934 contract as to control requirements and benefit payments. Many local control associations arranged separate balloting for corn-hog farmers who did not sign contracts for 1934. One-third of the participants in this separate balloting voted in favor of a corn-hog plan for 1934. The others voted "no." Taking 1934 signers and nonsigners together, the favorable vote averaged about 67 percent of the total vote. About one-half of the producers eligible to vote in the referendum did so.

### DAIRY INDUSTRY'S PROBLEM

Dairy farmers benefit substantially from marketing agreements under the Agricultural Adjustment Act, but these agreements do not accomplish all that is necessary. They cannot deal broadly with production throughout our far-flung dairy industry. Drought this year reduced the dairy output temporarily, and lessened the immediate need for planned adjustments of production to market needs. Such adjustments will be necessary sooner or later, however, because the dairy industry has more production capacity than the market requires. It cannot achieve prosperity simply by regulating the flow of dairy products into the market. It will have to develop means of controlling the supply.

Dairying is the largest of our agricultural industries, and perhaps the most complex. It is carried on in all the States, under extremely varied regional conditions. Problems that seem local to the dairymen immediately concerned are really national. Whatever affects the fluid-milk market affects also the market for butter and cheese and other milk products, and vice versa. Some areas have surpluses and others have deficits; and an adjustment program that ap-

peals strongly to the surplus areas may not look satisfactory at all to the deficit areas. Actually, dairying is not a single industry, but a group of related industries, each capable of helping or hurting the others. Unlike some of the other basic agricultural industries covered in the Agricultural Adjustment Act, dairying is on practically a domestic basis. This makes it peculiarly dependent on the level of domestic purchasing power.

In considering means to raise the dairy industry from the depression into which it fell after 1929, the above-mentioned facts must be regarded as fundamental. Important also are recent developments in prices and production. In March 1933 the index number of the farm prices of dairy products was only 71 percent of the pre-war average, as compared with 157 percent in 1929. Since April 1933, however, the index has risen markedly. In September 1934 it stood at 99 percent of the pre-war average. The price gain resulted partly from the general improvement that has taken place in business conditions and partly from the influence of the 1934 drought. Milk production is lower now than it was a year ago, owing mainly to reduced production per cow. As yet there has been no great change in milk-cow numbers, which are considerably above market requirements. Between 1900 and 1934 the number of cows and heifers 2 years old and older kept for milk on farms increased 70.9 percent, or from 15,253,000 to 26,062,000. Consumer purchasing power does not yet exist to support profitably the normal production of so large a number.

#### Gap Between Production and Consumption

Between 1900 and 1929 the increase in cow numbers merely kept pace with the growth of population. During this period, moreover, the market expanded through an increase in consumption per capita as well as through the growth of population. After 1929, however, milk-cow numbers increased at a rate faster than that required to keep pace with the growth of population. Furthermore, the consumption per capita declined. A widening gap had opened between production and consumption. In certain geographic divisions the increase in cow numbers after 1900 was much more marked than in others. Thus in the West North Central States, the East North Central States, and the South Central States the increases between 1900 and 1934 were 96.2, 71.2, and 98.2 percent, respectively. Hardly any increase took place in the North Atlantic States. These regional differences constitute a stumbling block in the way of Nation-wide cooperation in production control.

It is noteworthy, too, that creamery-butter production increased from 1,054,938,000 pounds in 1931 to 1,752,343,000 pounds in 1933. A marked shift took place from the production of farm butter to the production of creamery butter. There was also a shift from the production of milk for the manufacture of creamery butter to the production of milk for fluid consumption. These changes, like the regional shifts in production, have a significant bearing on the adjustment problem. Overproduction of fluid milk forces more milk into butter and cheese production and complicates the relationship between the producers mainly of fluid milk and those who produce mainly for the manufacturing plants. When the demand for dairy products fell off and overproduction appeared toward the end of

1929 numerous conflicts of interest developed among various dairy groups. As dairy production continued to increase in the face of a declining demand, these differences increased likewise.

Following the passage of the Agricultural Adjustment Act means became available for mitigating the struggle of competing interests. In its original form and through subsequent amendments the measure authorized production-adjustment and benefit-payment programs, marketing agreements, the removal of surpluses from the market, and the elimination of cattle affected with Bang's disease and tuberculosis. The administration did not immediately launch a program for adjusting production, but it removed quantities of butter from the market and sponsored numerous marketing agreements. Conditions, nevertheless, became worse, and toward the end of 1933 were critical. Accordingly the administration, in consultation with representatives of the dairy industry, attempted to work out a production-adjustment program.

### Temporary Benefit of Butter Purchasing

In undertaking the removal of surplus butter the administration recognized that the benefit could be only temporary. It acted at the request of dairy leaders, who pledged their support of a more thoroughgoing procedure looking to the regulation of production as well as of marketing. Through various channels, the administration purchased 51,572,265 pounds of butter, including about 11,000,000 pounds through Land O'Lakes Creamery, Inc., a cooperative organization. Nearly all this butter, and also about 6,000,000 pounds of cheese similarly purchased, went into relief channels. The purchases reduced excessive storage holdings of butter and cheese without materially affecting the long-time situation as a whole. It had been expected that the dairy industry would follow up the surplus-removal program with a concerted attack on overproduction. Regional and other difficulties interfered.

In the spring of 1934 the administration invited dairy farmers and others concerned to offer proposals for improving the dairy situation. Many came in. They fell generally into the following categories: (1) Allotment-benefit payment plans; (2) restrictions on the production and sale of dairy products; (3) restrictions on the manufacture of oleomargarine; (4) reductions in cow numbers; (5) the drying-off of cows; (6) feed-reduction programs; and (7) Government advertising of dairy products. Some of these proposals were economically unsound. Others were beyond the scope of the Agricultural Adjustment Act. Others could not furnish quick results, and still others could not apply to the dairy industry as a whole. Finally, the administration offered an adjustment program for consideration by farmers at regional meetings.

The program contemplated benefit payments to farmers who signed contracts agreeing to reduce their sales. They were to reduce their marketings from 10 to 20 percent, and were to get payments of approximately 40 cents a pound on the poundage of milk reduced below their base poundage. It was estimated that the benefit payments would have totaled about \$135,000,000. Funds to pay them would have been derived from a processing tax of 5 cents a pound on all sales of butterfat in all forms, and from a compensating tax on

oleomargarine. It seemed, when the administration offered this program, that continued heavy overproduction of milk was inevitable. It was, of course, impossible to anticipate the drought, and production under normal conditions would have greatly exceeded requirements.

### Dairymen Not United

Dairy farmers, however, were not sufficiently united in favor of the program. In fact, they appeared to be about equally divided for and against it, or against parts of it. It is a fixed rule of the Agricultural Adjustment Administration that no program shall be put into effect unless a substantial majority of the producers affected indicate their intention to cooperate. Accordingly the plan was held in abeyance. Since then milk production has been so reduced by the drought that no general dairy adjustment program was needed during 1934. Reduced pasture and short feed supplies are tending to hold down production, and may even result in supplies smaller than would have been obtained by the proposed sales-reduction program. Prices of dairy products may go higher than they would have done under the program, and higher than is desirable. Nevertheless the benefit will not be distributed equitably among producers. It will go largely to those not affected by the drought.

Action under the Agricultural Adjustment Act to improve dairy conditions now includes simply: (1) The issuance of licenses setting minimum prices to producers and carrying market stabilization features; (2) the development or administration of marketing agreements for the butter, evaporated milk, and dry-skim-milk industries; (3) purchases of butter and cheese for distribution through relief channels; and (4) the removal of cattle afflicted with Bang's disease and bovine tuberculosis. Cattle buying in the drought-relief program of 1934 included, of course, the purchase of many dairy cattle, but mainly this took the place of normal culling.

### Elimination of Diseased Cattle

The La Follette amendment to the Jones-Connally Act appropriated \$50,000,000 to be used (1) in the elimination of cattle affected with Bang's disease and bovine tuberculosis, and (2) in the removal of surplus dairy and beef products. Of \$30,000,000 tentatively allotted to disease projects, \$17,000,000 has been set aside for the elimination of cattle affected with Bang's disease, and \$12,000,000 for the elimination of those affected with bovine tuberculosis, \$1,000,000 remaining unallotted. Farmers signing contracts are to receive indemnity payments ranging up to \$20 per head for grade animals and \$50 per head for purebred animals. It is contemplated that about 1,300,000 disease-infected animals will be eliminated over a period of 18 months. This program has already been put into operation, and will be stressed when the current glut of cattle markets engendered by the movement of cattle from drought areas has subsided.

### SUGAR

By means of legislation passed in May 1934, the administration developed a comprehensive sugar program which provided the mechanism for the solution of difficult problems arising in an important



agricultural industry. The legislation embodied recommendations contained in a Presidential message to Congress dated February 8, 1934.

Sugar cane and sugar beets were made basic agricultural commodities under the Agricultural Adjustment Act and base quotas for continental beet and cane sugar were set forth. The Secretary of Agriculture was directed to ascertain the Nation's annual sugar requirements. He was empowered to allot quotas among the various insular and foreign sugar-producing areas; to establish marketing allotments for individual processors; to levy a processing tax on sugar; to include provisions governing labor conditions in sugar agreements; to purchase a substantial quantity of surplus beet sugar; and to enter into contracts with producers for acreage control.

Broadly speaking, the sugar program sought the following objectives:

(1) To retain sugar-cane and sugar-beet production in the United States at approximately the average level of recent years' production.

(2) To assure fair returns to the domestic producers by means of benefit payments made from processing tax funds.

(3) To stabilize sugar production in Puerto Rico, the Philippine Islands, the Territory of Hawaii, and the Virgin Islands at a level harmonious with consumption requirements of the United States and with the economic welfare of the various insular areas.

(4) To arrest the decline of the imports of Cuban sugar into the United States, so as to increase the Cuban market for American products.

(5) And, by reducing the duty on imported sugar, to prevent a rise in the price of sugar occasioned by the processing tax.

The Jones-Costigan amendment to the Agricultural Adjustment Act established a base quota of 1,550,000 short tons for continental beet sugar and 260,000 short tons for continental cane sugar. The legislation provided that the basis for determining the annual marketing quotas for the Territory of Hawaii, the Philippine Islands, the Virgin Islands, Puerto Rico, and for foreign countries should be the average quantities of sugar brought into the United States from the respective outlying areas for consumption in the three most representative years during the period 1925 to 1933. By proclamation of the President, taxes collected upon the domestic processing of sugar from the insular areas may be held as separate funds in the names of the respective areas, and are to be used for the benefit of agriculture through benefit payments for acreage reduction and for the expansion of markets and the removal of surpluses.

### Comprehensive Program Authorized

In short, the act furnished the means for a comprehensive attack upon the problem of steadily increasing sugar production in the United States and insular regions, which occasioned a serious threat to prices and was primarily responsible for the substantial reduction in American exports to Cuba in recent years. The mechanism provided in the act was necessarily complicated by the fact that the United States depends on imports and receipts from the insular areas for about 75 percent of its sugar, so that virtually nothing

could be accomplished through domestic adjustments unaccompanied by regulation of imports and adjustment of insular production.

Action to apply the various provisions of the act went forward immediately after its enactment on May 9, 1934. A processing tax was levied on sugar of 0.5 cent per pound, raw value. Simultaneously, the tariff on sugar was reduced by an amount equal to the processing tax. By this means the administration obtains its funds for carrying out the programs for the benefit of producers without placing an additional burden on the consumer. To prevent the accumulation of surplus stocks of sirup, of cane juice, and edible molasses, and depression of the farmer's price for cane, the administration levied a processing tax on these commodities of 0.125 cent per pound of total sugar content, as compared with the tax of 0.5 cent per pound on sugar.

The sugar consumption requirements of the continental United States were established at 6,476,000 short tons, raw value, for the calendar year 1934, and quota regulations were issued accordingly. The marketing quota for United States beet sugar was 1,556,166 short tons and for cane sugar 261,034 short tons. The quotas for Cuba and the insular areas were: Cuba, 1,901,752.14 short tons, raw value; Philippine Islands, 1,016,185.68; Puerto Rico, 802,842.20; Territory of Hawaii, 916,550.16; and the Virgin Islands, 5,469.81. For foreign countries other than Cuba, a reserve of 17,000 short tons was set aside to be allotted subsequently. Quotas of refined sugar were also established as part of the total quotas, as required by the act.

On the whole positive and effective steps have been taken to stabilize the continental and insular sugar industries. At the same time adequate imports of sugar have been provided to preserve substantial foreign purchasing power for American agricultural and other products. The insular possessions will receive compensation out of the proceeds of the domestic processing tax placed upon their sugars. Processing-tax funds will provide annually up to \$10,000,000 for disbursements in the Philippine Islands in the furtherance of agricultural benefit programs; \$9,000,000 for the Hawaiian Islands; \$8,000,000 for Puerto Rico; and \$50,000 for the Virgin Islands.

### Adjustment in the United States

In the United States a program has been launched for the adjustment of sugar-beet and sugar-cane acreage. Separate adjustment contracts have been drawn up for sugar-beet and sugar-cane growers. The contracts provide for adjustments of production, though not necessarily reductions, for the crop years 1935 and 1936, and for benefit payments for 1934, 1935, and 1936. The administration expects to make the first payment to cooperating growers before January 1, 1935, and another payment on the 1934 crop in the spring of 1935. It is estimated that these payments, the first of which will exceed \$8,000,000 and the second of which will be approximately \$4,000,000, will increase the average income of producers by more than \$100. The provisions of the adjustment contracts are drawn so as to permit the application of the benefit payments as partial crop insurance.

## RICE

In dealing with rice, a basic commodity under the Agricultural Adjustment Act, the administration moved to raise the income of the growers through marketing agreements rather than through a combination of processing taxes and benefit payments. It adopted this method because the rice industry is comparatively small and geographically compact, and because the rice growers have had considerable experience in cooperation. The administration negotiated agreements with the California rice industry and with the southern rice industry whereby the mills agreed to minimum prices and conversion charges and the growers undertook to control their production through acreage allotments.

The rice acreage of the United States nearly doubled during the World War. In 1920 it was 1,299,000 acres, as compared with 694,000 acres in 1914. Moreover, yields per acre increased gradually. As a result the production exceeded domestic requirements and put the American rice industry definitely on an export basis. In the 1921-22 season our rice exports amounted to nearly 20,000,000 bushels, as compared with only 3,000,000 bushels in the 1914-15 season. Subsequently the export movement declined, but it remained substantial. From 1926-27 through 1930-31 the annual rice exports ranged from 10,000,000 to more than 14,000,000 bushels. A material reduction in the rice acreage after 1930 did not take the industry off an export basis. The exports totaled 6,400,000 bushels in 1932-33 and the rice imports were very small.

This continuance of our rice industry on an export basis did not signify that an adequate export demand existed. On the contrary, the opportunity to sell rice profitably abroad steadily declined. Other countries assisted their producers with bounties and other forms of direct aid. Moreover, rice-importing countries were unable, owing to the depression, to purchase their normal quotas. Meantime the United States produced large crops. In 1930 and 1931 yields above normal on an unusually large acreage resulted in two crops of nearly 45,000,000 bushels each.

As a consequence of the reduced export demand and of our increased production, the domestic rice carry-over increased from 81,000,000 pounds in 1930 to 220,000,000 pounds in 1932. Though the carry-over declined in 1933 to 148,000,000 pounds, it remained the second largest on record, and prices dropped to a very low point. Rough-rice prices, which during the period 1921-29 averaged about \$1.10 a bushel, fell to 78 cents a bushel for the 1930 season, to 48 cents for the 1931 season, and to 42 cents for the 1932 season. In short, the position of the rice industry was identical in principle with that of the wheat industry, the cotton industry, the tobacco industry, and the hog industry. Burdened with excessive production for export, it could not get remunerative prices even for rice domestically sold.

## Agreement Included Crop Control

Accordingly, on September 25, 1933, the Agricultural Adjustment Administration approved an agreement, which included a crop-control program for 1934-35, for the California rice industry. Later an agreement and license for the southern rice-milling industry became

effective. In 1934 the southern agreement was revised to include a crop-control program. Parties to the California agreement are the Secretary of Agriculture, the rice millers of California, the Rice Growers' Association of California, and the independent rice growers' committee. Parties to the southern agreement are the Secretary of Agriculture and the rice millers of Arkansas, Louisiana, Texas, and Tennessee. As subsequently revised, the southern plan provided acreage allotments for individual growers. In both the California and the southern regions the production-control plan allots acreage among growers on the basis of their past production and gives an advantage in returns to the growers who cooperate.

In order to give the cooperating growers an advantage over non-cooperators, the California mills pay 60 percent of the agreed price when growers deliver rice. The balance goes into a growers' trust fund. Cooperating growers share in the final distribution of the trust fund according to their production units, which are based on their past history. Noncooperating growers receive no share in the trust fund. Of the total rice acreage planted in California, approximately 93 percent is within the scheme. Southern growers who made application for production quotas will receive full payment of the price established by the marketing agreement for all rice sold up to the amount of their quotas. Signatory millers purchasing nonquota and overquota rice have agreed to pay the producer 60 percent of the price set in the marketing agreement and to pay the remainder in to a trust fund held for distribution by the Secretary. It is estimated that over 95 percent of the southern growers applied for quotas.

### Object of Program Achieved

The control programs were undertaken largely to prevent an increase in rice acreage, and accomplished that purpose. The total rice acreage this year was 737,000 acres, according to the July 1 estimate, as compared to 769,000 acres last year. The September 1 estimate of production was about 36.5 million bushels, slightly more than that of 1933. Growers benefited from the marketing agreements in selling their 1933-34 crop. The average farm price for all grades and varieties of that crop was 76 cents a bushel, or nearly twice the average price received for the 1932-33 crop. The total carry-over in first and second hands on August 1, 1934, was considerably greater than that of a year ago, but stocks in wholesalers' and dealers' hands were unusually light. The Federal Surplus Relief Corporation purchased 50,000 pockets of rice, and as a result the net carry-over in commercial hands will be about the same as last year.

### TOBACCO

Considerable progress was made during the year in adjusting the supply of the various kinds of tobacco to the demand and in improving the income of tobacco growers. Approximately 275,000 growers in the United States and 10,500 in Puerto Rico entered into adjustment contracts in 1934, under which production was reduced about 30 percent. The United States crop of approximately 1,000,000,000 pounds in 1934 is about as much below the level of world consumption of this tobacco as the 1933 crop was above that level.

Six marketing agreements were negotiated for the principal kinds of tobacco grown in the United States. Under these agreements domestic buyers agreed to pay higher prices for their purchases from the 1933 crop on the basis of reductions to be made in the 1934 crop. The quantity of tobacco purchased under these agreements aggregated 633,000,000 pounds, which was nearly half the total production in 1933. It is estimated that the tobacco program increased the market receipts from the 1933 crop by approximately \$50,000,000 above what they would otherwise have been. In addition \$28,000,000 was paid to tobacco growers in the form of rental and benefit payments.

Altogether growers received approximately \$207,000,000 from tobacco during the current marketing year, compared with \$107,000,000 during the preceding marketing year. This total income is close to what tobacco growers received for their 1930 crop, and is only slightly below the average for the last 10 years. Prices of tobacco in Puerto Rico increased about 40 percent after the adjustment program was started.

At the beginning of the marketing year for the 1933 crop there was in the United States a surplus of 900,000,000 pounds of all types of tobacco above the carry-over which would be considered normal for the rate of consumption then prevailing. The production-adjustment programs were undertaken to relieve the market of this surplus. Extreme differences in the conditions of production, market outlets, and prices, and the highly specialized nature of the problems involved, necessitated separate contracts for 11 different kinds of tobacco.

### Effect of Monetary Policy

The increase in the price of gold during the past year from \$20.67 to \$35 an ounce had a stimulating influence on our export trade in tobacco, because of the increased purchasing power of foreign currency in relation to the American dollar. Tobacco exports from the United States during the year ended June 30, 1934, were 456,000,000 pounds, compared with 379,000,000 pounds a year earlier and 413,000,000 pounds 2 years earlier. Some increase of sales was obtained through exchanges with countries that export wines and liquors to the United States. Additional outlets may be found in negotiations conducted under the new Reciprocal Tariff Act, though progress will inevitably be slow.

The results accomplished by the adjustment programs demonstrate the importance of controlling the production of tobacco. From 1923 to 1932 the grower's share of the consumer's tobacco dollar declined from slightly more than 12 cents to 4½ cents. Meantime the share received by tobacco manufacturers in the form of profits increased from 5½ cents to more than 10 cents. In 1933 tobacco growers received approximately 10 cents of each dollar paid by consumers for tobacco products and manufacturers received about 7 cents.

The consumption of tobacco products is relatively more stable than the consumption of most other farm products. In 1923 the total world consumption of United States tobacco was approximately 1,225,000,000 pounds (farmers' sales weight), of which 725,000,000 pounds were used in the United States and 500,000,000 pounds in foreign countries. Total consumption gradually increased both in

the United States and in foreign countries until 1929, when it was about 1,400,000,000 pounds. Consumption of all United States types of tobacco declined from 1929 to 1932, and during the latter year was only 1,225,000,000 pounds, or back to where it was 10 years earlier, both in the United States and foreign countries. In 1933 the world consumption of our tobacco showed a small increase.

### Flexibility in Contracts

Flexibility in the adjustment contracts has been an essential factor in facilitating the control of tobacco production. The acreage and production of tobacco on individual farms vary widely from year to year; hence in drawing up the various contracts it was advisable to give producers operating under different circumstances several choices as to the year or years used in establishing their base. After the sign-up campaign for some of the kinds of tobacco was under way, it became evident that additional choices of base would be required to make it possible for some growers to obtain equitable allotments, and additional choices were provided.

A unique feature of the tobacco contracts is that, with the exception of cigar leaf tobacco, they all provide for definite allotments of production on individual farms as well as acreage allotments. With specific allotments of production, such as those provided under the tobacco contracts, it is possible to determine more definitely the exact size of crop which is likely to be produced and to make adjustments in the quantity to be marketed. Under these contracts adjustments of production allotments may be made after the crop has been planted and before selling time, on the basis of current prospects for production and demand. The contracts for cigar leaf tobacco were offered growers for the 1933 crop during the planting season, and consequently there was but little opportunity for growers to increase the yield per acre of that crop. The 1933 plan for the cigar leaf tobacco is being continued in 1934, which offers an opportunity for determining the relative merits of the different types of contracts for tobacco.

Growers who participate in the tobacco programs receive two classes of payments. The first payment is made in the form of a "rental", and is at a uniform rate per acre for each kind of tobacco upon the number of acres taken out of tobacco production, regardless of productivity. The second payment—and the third payment, in cases where a third payment is provided—are based upon the net sale value of the tobacco grown on the farm. In this way the payment reflects the yield and quality of the crop produced, and thus more nearly compensates each producer in accordance with the opportunity he has given up because of participating in the adjustment program. This method of determining payments was found to be advisable in the case of tobacco, owing to the extreme variations in yields and prices of tobacco on different farms.

Approximately one-third or more of the total payments made under most of the tobacco contracts are rental payments, which are made regardless of production in the current crop. In the case of other payments, minimum rates are provided for in each contract, and growers are guaranteed at least these minimum payments, regardless of the volume of their production. In some of the contracts

the minimum rates are stated in terms of a specified number of dollars per acre of the rental acreage. In others, provision is made for a deficiency payment to be made on each pound that the grower's production may fall below his allotment. Insurance against a partial or total crop failure is thus provided.

### Kerr-Smith Tobacco Act

The Kerr-Smith Tobacco Act, approved June 28, 1934, was passed by Congress in response to requests of a large number of tobacco growers, as a supplement to the tobacco programs inaugurated under the Agricultural Adjustment Act. It provides for the levying of a tax of  $33\frac{1}{3}$  percent upon the sale price of all tobacco of any type covered by a production-adjustment program, except during 1934-35 the tax shall not be applied to Maryland, Virginia sun-cured, and cigar leaf tobacco. The act further provides that if it is determined that a lower rate of tax would best effectuate its declared policy, the rate may be not less than 25 percent. For the crop year 1934-35, the rate of the tax has been established at 25 percent. The tax may be levied upon tobacco harvested during the crop year 1935-36 of any type covered by a production-adjustment program, provided three-fourths of the growers of that type favor the levy.

The act provides for the issuance of tax-payment warrants to all producers operating under a production-adjustment contract, and for the issuance of such warrants to noncontracting growers in each county up to an amount of tobacco equal to 6 percent of the number of pounds covered by warrants issued to contracting producers. Tobacco growers who did not sign adjustment contracts prior to the passage of the Tobacco Act were given 30 days from the date on which it was approved, June 28, 1934, during which to sign such contracts. All contracts signed during this 30-day extension period provide the same benefits and require the same performance as those entered into during the regular sign-up campaign.

With the very large sign-up that has been obtained under the tobacco contracts, and with the provision for issuing additional tax-payment warrants to noncontracting growers, it is believed that only a very limited number of growers will be required to pay the tax upon tobacco harvested in 1934.

### UNEMPLOYMENT AND SUBSISTENCE FARMING

It is impossible to consider only the farmers in promoting farm recovery. Crop adjustments affect nonagricultural interests profoundly. They affect the price and the volume of the farm output, and thus influence both the cost of living and the employment that depends on the handling of agricultural goods. Moreover, by limiting farm production, the crop adjustments tend, though not in any serious degree, to create rural unemployment. Whatever restrains production reduces the need for man power. The Nation's farm program therefore creates certain responsibilities toward nonfarmers. This fact the Agricultural Adjustment Act recognizes in its declaration of policy, which lays down a course of action conceived in the national interest rather than in the interest exclusively of the farmers. It calls upon the community as a whole to do some things

for agriculture, on the assumption that the resulting benefit will be shared nationally. The idea, in short, is that farm relief will prove to be national relief.

In certain respects the implied obligation to aid agriculture only in ways consistent with the general interests creates no difficulty. Action taken to raise farm prices adds something to the cost of living, but provides compensation by improving the rural market for city products. It creates the urban purchasing power needed to absorb the costs. Consumers do not find the higher prices burdensome because the increased farm income flows into the channels of trade. There is a quickening of our whole economic life. In other respects, however, the problem is more complicated. Particularly is this the case in connection with unemployment, upon which as already noted the crop adjustments have a definite bearing.

In hard times the unemployed look naturally to the land. They cannot be refused access to it; and yet to admit them into agriculture unconditionally would involve removing certain restraints upon agricultural production. Here is a dilemma. On the one hand, the progress of agriculture absolutely requires a limitation of farm production and therefore of farm employment. On the other hand, national expediency forbids closing the rural country to the urban unemployed.

### Crop Controls Cause Little Unemployment

The Agricultural Adjustment Act creates very little unemployment. Farm owners, and tenants with a reasonably secure tenure, do not become unemployed through crop reductions. Hired labor and certain types of tenants, notably the share-croppers of the South, may occasionally suffer. But the Agricultural Adjustment Administration endeavors to protect these groups. In cotton and tobacco contracts it stipulates that landlords as far as possible shall maintain their normal force of tenants or hired hands. By comparison with other causes of rural unemployment, such as the interruption of the flow of rural population to the towns and the flight of city people to the country, the influence of crop adjustments is negligible. Between 1929 and 1933 nearly 2,000,000 people left the towns.

Six Southern States last spring reported having on their relief rolls from 15,000 to 40,000 farm families per State. For the most part, however, these farm families had been thrown into distress by the depression. Undoubtedly the number would have been greater had the adjustment program not increased the income from cotton in 1933. Moreover, the great majority, perhaps 75 percent, were still on farms in one capacity or another. They were not entirely without means of self-support. Considering the country as a whole, the crop adjustments relieve far more unemployment than they create. Scores of towns and cities throughout the country, which 18 months ago were in the depths of depression, have picked up under the influence of restored farm buying.

It is nevertheless true that farm recovery, with its need for restraints on farm production, goes against the natural desire of the urban unemployed to seek refuge on the land. In this matter the agricultural interest—the necessity for farmers to curb their competition—must to some extent give way. There are many millions of



unemployed in the United States. Their maintenance is a public charge, which cannot be repudiated. About one-third of the families on relief rolls are already in the country or in country towns. Moving an increased proportion from the congested centers of population doubtless would reduce in many cases the expense of maintaining them. Living costs are much lower in the rural communities, and the country affords a chance for the unemployed to produce some of their own food. To some extent the shift is necessary.

### A Counterweight to Farm Recovery

Such a shift tends to deprive commercial farmers of a part of their urban market. Moreover, it tends to increase farm competition. So-called "subsistence farming" cannot be entirely noncommercial. Inevitably it produces something for sale. This is a counterweight to farm recovery which farmers will cheerfully accept in an emergency. But they have a right to urge that its effects be tempered as much as possible. We ought not to adopt a defeatist attitude, and to say the only thing to do with urban unemployment is to push it into the country. That simply means dividing a reduced agricultural income among an increased number of persons. It is far better to push industrial recovery. Meantime, we must handle the situation with the least injury to established agriculture.

Subsistence farming has been suggested as a solution—i. e., farming not for the market but for the home table. This is a difficult aim. Farm families require a cash income to supplement what they can grow for their own use. Unless they can earn money off the farm, they must get it from the farm. Otherwise the subsistence farm does not furnish subsistence.

Established farmers have a right to insist that nonfarm sources of cash income be made available when the country establishes unemployed people on the land. Placing thousands of families on the land, with no other source of income, drives them into commercial farming. They may not produce any great quantity of goods for sale, but what they do produce will be sold at distress prices. Such fostered marginal production can do great harm. So far the movement to put city people on the land has run ahead of the provision for supplementary employment. People have been decentralized faster than industry, and established farming suffers. Part-time nonfarm work must go along with so-called "subsistence farming."

The task is full of difficulties, which must nevertheless be faced. Centralized industry grew up in its present locations in the pursuit of profit. To decentralize it, not primarily for the sake of profit but in order to furnish employment in new locations, should not be attempted hastily. In thus trying to improve the conditions of employment, the profit motive cannot safely be ignored. To do so may do more harm than good. Redistributing labor and industry over the countryside is a delicate operation. Yet not to try it means destroying the essence of the subsistence-farming movement, and turning it into an unregulated and uneconomic eruption of city people into commercial agriculture. Countryward movements of the unemployed should be accompanied by a sufficient expansion of local non-agricultural employment to provide a local interchange of factory and other goods for farm products. To expand farm production

for local consumption, without at the same time expanding industrial production for local consumption, would simply displace farm products from other regions. It would aggravate the unbalanced condition of agriculture, and would not work any net improvement.

### Nature of the Problem Recognized

Relief agencies, both Federal and State, have this well in mind. In one State 49 percent of the unemployment-relief load is rural and 51 percent urban. The State relief agency will have urban-relief groups produce industrial goods, while rural-relief families produce food. Both types of production will be held within relief channels, and a system of exchange will give each person credit for his own production. This method should have wide application, since it furnishes unemployment relief at relatively low cost without seriously complicating farm readjustment. Another State has plans under consideration for establishing manufacturing or processing plants in country communities to furnish part-time employment. These establishments, it is believed, will provide a source of cash income both to urban-relief families newly moved into the areas served and to rural-relief families already there. In yet another State the relief authorities contemplate relocating good families whose adult members were farm-reared. Many such people wish to return to their old neighborhoods but not necessarily to resume farming.

Fundamentally, the question is whether poor folk in town and country should be supported in demoralizing idleness or helped to become self-supporting. Either method involves expense to the rest of the community. Which is the less costly, everything considered? Short-sighted views may prefer straight charity to obviate increasing the intensity of industrial or agricultural competition. But that involves attaching value to work for its own sake, without regard to the destination of the product. It means that the employed elect to work harder, so that the unemployed need not work at all. The other method, whereby urban and rural relief families employ one another through an exchange of services cuts down the relief bill, may have little harmful effect on commercial industry and agriculture and prevents social disaffection. There is nothing wrong with the idea. The danger is that we may not apply it thoroughly; that in practice we may not couple subsistence farming with adequate part-time employment.

### Establishment of Subsistence Homesteads

The Division of Subsistence Homesteads of the Department of the Interior is promoting the true objective. Section 208 of the National Industrial Recovery Act appropriated \$25,000,000 to be used to "aid in the redistribution of the overbalance of population in industrial centers" through assisting in the establishment of subsistence homesteads. Before the close of the fiscal year the Department of the Interior had approved plans for 58 projects, the majority of which are now under way. In each project there are from 25 to 300 homesteads.

Specifically the aim is to help poor families to get a more secure and more satisfactory living through a part-time combination of

industrial employment and subsistence agriculture. The homesteads are usually 1 to 5 acres in size. They are capable of producing a large portion of a family's yearly food supply. The cultivation of vegetables, fruits, truck crops, and the care of poultry, and in many cases a cow, comprise the agricultural operations on most subsistence homesteads.

Because the subsistence-homestead plan is a method of aiding in the solution of various social problems, rather than an object in itself, the projects vary considerably. First, there are garden homesteads for industrial workers. Projects of this type are located near industrial towns and cities, where the workers, while living in semi-rural communities are yet able to commute easily to and from their urban jobs. Such projects may tend somewhat to decentralize population and industry. In large urban areas, such as Los Angeles, Chicago, Youngstown, and Birmingham, the decentralizing trend develops within the urban districts through the establishment of suburban areas of subsistence-homestead communities. Small industrial towns, such as Decatur, Ind., Austin, Minn., Taylors, S. C., or Longview, Wash., offer good opportunities for subsistence homesteads under conditions favorable to industrial decentralization.

#### Projects for Stranded Industrial Groups

Then there are subsistence-homestead projects for stranded industrial groups. Great numbers of people formerly employed in the exploitation of natural resources have permanently lost their jobs through the exhaustion of the resources, as, for example, in certain abandoned coal fields of West Virginia. With the home production of food and shelter on the subsistence homestead as a basis, and with recourse to part-time employment in forests, newly established industries, or handicrafts, many previously destitute families are becoming self-supporting.

Rural rehabilitation sometimes calls for applying the subsistence-homestead plan to agricultural groups. The submarginal areas of the old Cotton Belt, of the cut-over lands of the Lake States, and of certain dry-farming regions of the northwestern Great Plains have been chosen as demonstration sites. Thus farm families have a chance to move from eroded, worn-out, or drought-stricken sections to subsistence-homestead communities located on good land. Intensive farming, primarily for subsistence, replaces extensive and wasteful cash-crop production. The crops produced for the market are usually not the staples in which surpluses exist. Moreover, the establishment of these new farm homes is offset by the retirement from cultivation of proportional amounts of submarginal land.

#### LAND-UTILIZATION PROBLEMS

Farm-recovery measures applied up to the present have been of an emergency character. They have been drastic and temporary remedies, necessitated by a collapse in foreign and domestic markets, a tremendous accumulation of farm surpluses, and the virtual bankruptcy of agriculture. How long it may be necessary to continue these expedients with various modifications we cannot tell. Full recovery of the agricultural market may be long delayed. It is

therefore necessary to transform the emergency program into a more permanent policy, whereby we may adjust production at the least cost, with the least disturbance to normal farming, and with the most encouragement to farm efficiency. We must move from emergency adjustments to long-time planning.

Essential to the welfare, not only of agriculture but of the Nation as a whole, is a better land-utilization policy. This involves systems of land tenure as well as of land use. It is concerned with all the principal land uses, including farming, forestry, recreation, and wildlife conservation. In any sound national economy a rational land policy must be the cornerstone. In this country we have tried many other means; we have not yet tried that. On the contrary, we have retained as a heritage from our pioneer epoch a seriously defective land-use method. Accordingly the Department of Agriculture has established a land-policy section in the A. A. A. which is cooperating with the National Resources Board, the Federal Emergency Relief Administration, and various other Federal and State agencies. It is studying means whereby land that should not be in agriculture may be withdrawn from it, and whereby land properly in agriculture may be devoted to the right crops in the right proportions. This is a social as well as an economic problem. It involves human beings as well as land.

In cooperation with the Federal Emergency Relief Administration, the Department is trying to find new locations for farm families now living in areas naturally unsuited to farming, or untenable as a result of economic changes or of the depletion of soil, timber, or mineral resources. This is a task which must be advanced slowly. Public agencies may desirably purchase poor cultivated lands gradually, but to do so quickly would be nearly impossible. Such action would run into difficulties of negotiation, of title examination, and of survey. It would involve much risk of excessive speculation and possible fraud. Still more important, it would suddenly displace perhaps a million farm families, for whom other employment would be hard to find. Furthering the retreat of agriculture from unsuitable land is a long-time operation. It should not be regarded as a means of effecting production adjustments rapidly. This year the Government is developing plans to acquire submarginal lands in about 30 States; but the purchases in view will total not more than 4,000,000 acres, only about half a million acres of which will be cultivated land. These figures give some idea of the difficulties.

It is, of course, extremely desirable to promote the retirement of lean acres from cultivation. The problem of submarginal areas is partly a problem of local maladjustments. Attempts to cultivate barren acres mean a wastage of human efforts and of natural resources. Frequently the land would be much more valuable in forests, recreation areas, or wildlife refuges. Important advantages result from the regrouping of rural populations, so as to obviate unnecessary costs of local government in sparsely settled areas. Action should be taken to prevent the reoccupying of abandoned poor farms. Such steps promote the welfare of the people immediately concerned, and harmonize with our national crop-adjustment programs. Our present emergency adjustments apply to good land and poor land alike; to well-farmed and ill-farmed land. Frequently they necessitate the disuse or less effective use of buildings,

implements, work stock, and labor. They may disturb the general farming plan and the rotation system, and complicate the relations of landlords and tenants. As rapidly as it can be developed, we should employ a more discriminating program, in which the permanent withdrawal of land unsuited to farming will play an important part.

### Soil-Depleting Practices

As I mention elsewhere in this report, soil erosion in many parts of this country is undermining the foundation of economic and social life. But erosion is only one source of soil depletion—only one aspect of a process of soil mining which should be stopped. Through practices which became habitual in our pioneer period, and which continued throughout extensive areas, millions of acres have been ruined for cultivation. These areas in many cases may be restored to usefulness through reforestation or through their allocation to other nonfarm uses. A much larger area not yet abandoned is declining. Some of it was always submarginal. Much of it has become so. It should be acquired by public agencies which may find for it many profitable uses.

On much land that may continue in farms, permanent pasture and forage should be substituted for intensive crops, and systems of rotation should be introduced to check erosion and restore or maintain fertility. But to do this in many areas would reduce commercial production. Sometimes that would be entirely compatible with the farmer's immediate interest. Again it would not. Farmers, if left to themselves, would in many cases continue their soil-exhausting practices. As one remedy, the Department is studying the possibility of using crop-benefit payments to encourage types of farming adapted to soil conservation. It is examining the practicability of inducing farmers, through crop-adjustment contracts, to bring about collectively a more desirable allocation of the land in farms among different farm enterprises. It may eventually be possible for the Government to purchase easements which would give it the right to require certain practices tending to soil conservation. Other means may be developed gradually to replace the emergency crop adjustments with a long-time program to promote permanently efficient farming and social stability.

Farm holdings in many parts of the United States should be readjusted in size. In some areas they are too small and in others too large. Without Government initiative the necessary readjustment will not occur or will occur but slowly. Larger farming units in some regions will make possible a wider use of pasture and of soil-conserving crops. Credit policies could be shaped to promote the blocking up of small farms into larger units. It need scarcely be said that action to increase the size of farm holdings would have to be coupled with provisions for the relocation of many farm people, for obviously an increase in the average size of farm holdings may mean a decrease in the number of farm families. On the other hand, farm holdings are now too large in certain areas where creditor institutions and agencies have taken over considerable tracts without having the means to farm them well. Moreover, many plantation owners in the South can no longer operate their plantations by the old methods, which called for annual advances to croppers. In such

areas public agencies might help to establish farming on a family basis. In some localities changes in the average size of farm holdings would involve a less intensive, and in other localities a more intensive, use of the land.

### No Fixed Adjustment Possible

In all agricultural planning, emergency and long-time alike, we must seek a continuing and not a fixed adjustment. We cannot accurately forecast the effective demand for farm products a year ahead, to say nothing of 10 years or 20. General economic recovery at home and abroad would change the whole situation. Further economic difficulties would change it in the opposite direction. Neither crop adjustments nor land planning can insure a continuously stable balance. Flexibility in production and in land policy is the only means by which stability can even be approached. We cannot expect to eliminate the tendency for production in particular crops to get out of line with demand; nor can we plan the general size of the farm plant and the general distribution of farm enterprises for a long time ahead. Every period of good times creates new farms. With every prospect of better conditions, real-estate interests stimulate the demand for land and eager individuals push into new areas. It is neither possible nor desirable to put agriculture in a strait-jacket. Nevertheless, we should constantly strive to prevent known wrong uses of land. Mistaken expansion, once it has occurred, tends to persist. Better means of prevention are urgently necessary. Even the lands still owned by the Government are not guarded against unwise use.

By authorizing the Secretary of the Interior to permit homestead entry only on suitable lands, the Taylor bill, which passed Congress at the recent session, provides a partial means of preventing further unwise settlement of the public domain. It applies, however, only to about half the total area. The public should have a voice in determining whether privately owned land as well as Government-owned land should be settled, because settlement obliges State and local agencies to build schools and roads and to furnish other services. They should not be compelled to bear this heavy expense for sparse and scattered populations and perhaps for very transitory settlers. Public agencies must furnish relief from the effects of unwise settlement. They are spending millions already to correct bad effects of our homestead policy, persisted in after the lands for which it was adapted had been taken up. They are spending considerable sums to aid families in moving from land which should never have been farmed. In land-use planning, a first essential is to prevent the repetition of past mistakes.

Much may be done by the States to promote sound methods of land use. Zoning may help to prevent unsuitable or hazardous settlement. Eventually this principle may come to have an important place in rural land policy, just as it has already in urban land policy. Wisconsin has adopted zoning ordinances in some of its cut-over counties, and several other States have made a beginning in rural zoning, though mainly in suburban territory. States may find it desirable to adapt their grants-in-aid policies toward the same general end. By this means they might guard against some of the abuses

that come from the occupancy of new areas by scattering settlers, while continuing to help the poorer districts in providing schools and other necessary facilities. In cooperation with the States, the Federal Government could outline areas unsuitable for settlement; it might also shape credit, emergency-relief, and crop-benefit policies to discourage unwise settlement. It might acquire easements which would authorize it to prevent the settlement of areas not suited to farming. In our land system Federal and State policies must go hand in hand. Land policies frequently are local in activity and initiative, but they should be national in procedure and scope and should serve national as well as local ends.

It need scarcely be said that land planning involves questions concerning not only agricultural lands, but also lands adapted to other uses. Indeed, we cannot entirely separate the agricultural from the nonagricultural uses of land in a well-rounded program. The depletion of forests, minerals, and game resources causes both urban and rural harm. It affects employment in both town and country. Many rural communities depend greatly on part-time nonfarm work. Vast areas of nonagricultural land, for which we have at present no constructive use, might be made profitable through Federal and State cooperation in developing a unified land policy. Large tracts formerly in private ownership are tax delinquent. Much tax-delinquent land may not reenter private ownership quickly and perhaps should not. But before public agencies can find good uses for this land, State laws affecting tax delinquency need, in many cases, to be modified; and Federal and State policies need to be harmonized to promote the acquisition and use of such lands by public agencies.

### Social Aspects of Land Use

Another vital aspect of the land program is the human aspect. As competition for land increases, two harmful results develop. Land-hungry folk take up areas that should not be farmed, and capital charges tend to become excessive on all farm land. In planning for the welfare of the rural population we must consider both the amount and the distribution of the farm earnings. On land unsuited to agriculture, neither science nor toil can make the return sufficient. Even on good land, farm earnings tend to be absorbed in capital charges and to be more or less diverted from the farm population. Our present agricultural policy seeks a remedy for this twofold evil. On the one hand it strives to direct agricultural enterprises to the right crops and their right lands. On the other hand, it seeks to obtain for the farm operator a larger reward for his labor and management. But farm income in times past has risen greatly without permanently safeguarding farm welfare. What we are doing now to increase farm earnings will not produce a better final result automatically.

The welfare of farm families depends greatly, in short, upon the conditions under which men work the land. Our system of unrestricted, private ownership developed in a reaction against the restraints of earlier tenure. It served the country well enough during the period of agricultural expansion into new areas. But we see now that it conferred the right not only to use but to abuse natural resources and to burden the land with excessive capital charges.

Perhaps we have gone too far in allowing freedom in the transfer and use of land. Such freedom does not necessarily cause land to fall into the hands best able to use it. Individuals cannot always follow their long-time interest, to say nothing of that of the community. In seeking his own gain the individual, with his personal one-lifetime view, may squander soil and soil fertility. He may mine the soil and devastate the forests. In taking steps to guard against such evils in the future, public agencies would protect not only the community but the individual farmer. Wastage of natural resources originates in self-interest, but does not in the long run promote it.

Unrestricted property rights do not necessarily insure the welfare even of farm owners. Complete license to buy and sell land, and to use it in any manner that seems desirable, ultimately burdens the farmer with heavy fixed charges. As farm earnings increase, land values rise. Farmers obligate themselves for more than the land can earn continuously. A severe price decline ruins them. On over-capitalized farms, even a small decrease in the income from products sold may bankrupt the farm operator; it will certainly make his farm ownership illusory. It will tend to separate the ownership from the operation of the land, and to degrade the economic status of the farm family.

### Growth of Farm Tenancy

For proof we have only to glance at the recent growth of farm tenancy in the United States. Farm tenancy is not good or bad in itself. It has advantages or drawbacks, depending on the conditions under which it develops. Under favorable conditions it enables farm operators of limited capital to become farm owners. It is a stage in their progress toward financial independence. Under other conditions an increase in farm tenancy may signify that farmers are meeting with increasing difficulties in their struggle for land. The type of tenancy we have in many parts of this country cannot be generally approved. It involves short tenure and lack of care for the soil. In the prosperous period that preceded the first post-war depression, tenancy increased in some areas because rising farm valuations made it more profitable to rent than to buy land. In the post-war depressions, tenancy increased because farmers who had borrowed heavily to buy or to improve farms could not meet their obligations. They lost their ownership status and became tenants. Some growth of tenancy is inevitable, when growing populations compete for access to desirable land. But a great increase in tenancy, reflecting bad financial organization in agriculture, is another thing altogether.

From the standpoint of better land use and also of better rural welfare, we need to correct the unwholesome features of tenancy. These are the migratory habits it fosters, and the disregard of soil fertility and long-time farm efficiency. In this country the average occupancy of farm tenants is about 2 or 3 years as compared with the average owner occupancy of about 14 years. In certain other countries land occupancy continues in the same family for generations. This is true of tenant occupancy as well as of owner occupancy. Tenancy need not mean brief occupancy, with all its bad results. Many European countries have systems of land tenure which modify some of the socially undesirable features of unrestricted land owner-



ship. In some countries the occupier has the right to use but not to sell the land, while restraints on inheritance prevent extreme and uneconomical subdivision. Some countries require that land shall be efficiently used. It may not be practicable in the United States to adopt these principles, but less drastic changes merit consideration.

### Possibilities of Improved Tenure Conditions

It should be possible to promote a more secure tenure, to discourage speculation and absentee ownership, to compensate tenants for unexhausted improvements, and to help deserving small farmers toward land ownership. Such reforms would increase the farm operator's income, without damage to property rights. They are more necessary now than ever before, owing to the prevalence of urban unemployment, which obliges more people to stay on the land. In order that they may do so without unduly increasing agricultural competition, and without paying exorbitantly for the privilege, the conditions of land tenure should be modified. It may be desirable to plan for a larger number of small semicommercial or partially self-sustaining farm families, and for some reduction in the number of large commercial farms. Ordinarily, an increase in the farm population increases both production and fixed charges. As a result, the income of farm operators declines. In the circumstances with which American agriculture must now deal, improved conditions of land tenure would afford a partial remedy.

### TYPE-OF-FARMING STUDIES

In projects for using natural resources to better advantage, and for aiding farm families to move from unsuitable land and to relocate in areas better adapted to furnish a livelihood, the results of farm-management studies have great value. Investigators in the Department and in the State agencies began farm-management work years ago to help in solving individual farm problems. Eventually it may prove most useful in broad social applications.

In the pioneer period and for long afterward farmers relied on experimentation and experience in developing their farming systems. On the whole the method worked well, but it was costly. Those whom it failed did not complain because they had expected to take chances. But the problem is different when public agencies undertake to direct the use and settlement of land. This is a tremendous social responsibility. It involves risks which only scientific knowledge can minimize.

Failure would involve consequences proportionate to the scale of the operations, and failure would be certain if blind experimentation were the only guide. To prevent it we must have detailed knowledge of the physical and economic factors involved as they affect the well-being of actual and prospective farmers. Failure will discredit directed resettlement far more than it discredited the old free-for-all method under which people regarded heavy casualties as a matter of course. But the most important reason for studying the problem carefully is that without careful preliminary study it will be impossible to do a good job.

Farm-management knowledge, derived from systematic study of the economic and managerial experience and problems of actual farmers, is a kind of generalized experience which may save thousands of persons from repeating the same individual mistakes. There are two general aspects of farm-management study, the results of both of which are useful in guiding social effort in resettlement of farms and other adjustment enterprises. The first is a broad study of agriculture and agricultural resources in their relation to the individual farmer's actual farming. This is usually termed type-of-farming research. The other is the more intensive study of the details of individual farm organization and operation, production costs, and farm practice.

The broader, or type-of-farming aspect of farm-management research had its beginning, so far as the United States Department of Agriculture is concerned, with the publication in 1923 of a bulletin by the late W. J. Spillman entitled "The Distribution of Types of Farming in the United States." Though at that time the author could not attempt any close localization of specific farming types, he showed the need to do so, and broke new ground by linking physical with economic considerations. Later investigators, encouraged by a popular response to Dr. Spillman's work, followed the line indicated to such good purpose that available type-of-farming data now delineate type-of-farming areas for the whole United States on a fairly localized basis. With material furnished by the 1930 census, Federal and State agencies pushed their studies further. They have detailed type-of-farming projects either completed or under way in more than 20 States.

### Nature of the Study

Type-of-farming research, besides describing accurately what the farming is in each local area, involves a study of all of the things that influence agricultural development and that determine just how farmers farm in each area and under each specific set of conditions, economic and physical. It involves the classification of farm lands, the study of agricultural markets, and of industrial conditions and business trends. It is essentially a cause-and-effect analysis in which the causes are all the conditions and forces the farmer has to deal with, and the effect is the farming which results, together with the degree of its success or failure.

The other phase of farm-management research, equally important with type-of-farming studies in the guidance it furnishes for public efforts at improving the farmer's condition, is the study of the farm as an individual business and producing unit. In the beginning of farm-management research this was its entire scope. Through the examination of a limited number of farms, it tried to determine the essential elements of farm organization and operation leading to success. Its results had only limited application at first, because the study was not sufficiently localized and its sponsors tried to generalize too broadly from the limited conditions studied.

As such studies went forward, however, there was accumulated a vast amount of essential information contributing to the detailed understanding of farming costs, of the principles of organization and management, and of what is required to make a successful farm

and to make good farming. Such understanding is indispensable in the great social task of guiding the adjustments in agriculture.

### Trial and Error too Slow Just Now

Short cuts to new types of land use may not be necessary or even advisable in normal times. They are imperative just now. Trial and error are too slow. Although farm-management research tends in general to uphold prevailing farm practice, it also shows that agriculture generally lags in adjustment to changing physical or economic conditions. Delay is the rule; and delay is costly. Moreover, the more rapidly conditions change the greater is the lag in the readjustment. With readjustment going forward, so to speak, under forced draft, and yet failing to keep pace with the breakneck rapidity with which the agricultural situation changes, we must learn by realistic tests what types of farming and what systems of organization and operation seem to have the best chance in the new conditions. Research cannot eliminate risk or furnish absolute assurances of success. But it can furnish better guidance than can be had otherwise. It is a means of anticipating the lessons of individual experience.

### THE SHIFT TOWARD GRASS AND FORAGE

Permanent farm recovery requires full use of the farm plant in ways that will not depress prices. Aid may come from two sources—from improvement in the demand, foreign and domestic; and from changes in the size of the agricultural plant or from a shift from such crops as corn and wheat to those like grass and forage. With the prospects of an improving demand, and with proposals to withdraw land from cultivation under adjustment contracts and through the diversion of submarginal areas to nonfarm purposes, I have dealt already. Neither from any quick improvement in the demand, nor from the withdrawal of land from agriculture, are we likely to reach quickly a point at which capacity production will be continuously profitable. Necessarily, therefore, we must consider a major shift from excess acreage of surplus crops back to the balanced condition between cultivated and grass acreages which existed before the war.

Reducing production by using land less intensively would promote efficiency; for efficiency is not synonymous with intensity in farming. Frequently, as both livestock men and field-crop growers well know, it does not pay to strive for maximum production per animal or per acre. There is a point beyond which further expense to increase output means waste. This point of diminishing returns exists for agriculture as a whole, as well as for the individual farmer. To plant high-yielding crops on every possible acre is seldom good business.

A general shift toward hay and pasture and toward soil-improving crops would have marked advantages for American agriculture just now. It would help to readjust the production of cash crops, and would at the same time reduce costs of production considering agriculture as a whole. Furthermore, it would help to prevent erosion. In other words, a broad movement toward the less inten-

sive crops would tend to increase farm incomes now and to upbuild the agricultural plant.

Naturally, the plan cannot be put into effect to the same extent on every farm. Farmers with heavy fixed costs and with no chance to farm more acres as an offset to decreased production per acre, would have legitimate objections. Generally, however, the shift would reduce the pressure of supplies on the market, without throwing farm land totally out of use. It would advance the farm-readjustment program as a whole, with some advantage to every farmer. In order to square the general with the individual interest and to overcome difficulties on individual farms, it may be necessary to arrange for collective action under Federal guidance, in harmony with principles already familiar to the country through the A. A. adjustment programs. There is no reason why collective voluntary adjustment should not work as effectively in promoting a shift to grass and forage as it does in other directions.

Through benefit payments the Agricultural Adjustment Act has enabled many farmers already to increase their pasture and roughage. Further steps to that end would be facilitated should it prove practicable to place the adjustment contracts on a farm basis rather than on a commodity basis. Such a plan would apply the processing-tax and benefit-payment system to the general task of getting land from cultivated crops into grass and forage, and of encouraging a shift toward a less intensive type of farming. By this means the total farm output would be held more nearly in line with the demand year after year, prices would be increased, and operating efficiency would be maintained. Making agriculture less intensive would benefit directly such major cash crops as wheat, cotton, and tobacco, and would benefit livestock and livestock products indirectly. An average acre of hay or pasture will produce only about half as much feed as an average acre of grain; but since the unit is lower, a double advantage results. Prices go up and the expenses of production go down.

### A Rapid Shift Impracticable

Such a shift cannot be accomplished quickly. It involves complicated adjustments in crops and in farm organization and management. In the Northeast much of the farm land is already in hay or pasture. In the Corn Belt there is more room for the shift. Farmers there have a wide range of crops from which to choose. For permanent pasture they can use Kentucky and Canadian bluegrasses, alfalfa, and mixtures of bluegrass and such grasses as redtop, orchard grass, meadow fescue, and ryegrass. For temporary pasture they can sow Sudan grass, rye, soybeans, oats, vetch, timothy, and the clovers. Such crops as sweetclover and soybeans can be used for soil improvement. In the South the chief need is for soil-improving and erosion-preventing crops.

In the wheat-producing areas on the western edge of the Great Plains the problem is more difficult. Some of the land there can be put into Sudan grass, some into crested wheatgrass, and some into sorghums for forage. Some land can be summer-fallowed. For the most part, however, acreage retired from cultivated crops in this region should, if possible, be allowed to revert to permanent pasture. In the Palouse area of the Pacific Northwest, the hilltop land, the

fertility of which has been much depleted, should be removed from cultivation and planted to grass. Such a procedure would help to control erosion, as, indeed, the increased use of grass and forage would in most areas. Recent surveys indicate that approximately 35 million acres of formerly cultivated crop land, most of which was once very fertile, have been forced out of cultivation by erosion. From an additional area four times as large the top soil has largely disappeared. A grass cover is an economical and permanent cure for soil erosion.

In 1934 the drought and also a seed shortage prevented rapid pasture development. It would be impossible in any event, however, to do the job in a single season. This Department, in cooperation with State agricultural agencies, is conducting experiments to determine the cost of establishing pastures, and the value of hay and pasture in producing milk and meat. It has published a pasture handbook. It is also studying how to reconcile individual and group interests. Unless the shift from cash- and feed-grain production to soil-improving crops and to hay and pasture can be made profitable for the individual farmer, it will not be made. An obstacle in the past has been the desire of competitive farmers to produce as much as possible, in order to maintain their income. As a result, the individual interest clashed with the group interest. To remove this clash is the special task of the A. A. A. A considerable proportion of the land taken out of cotton and tobacco went into forage crops and feed for home use. Much of the land taken out of wheat and corn this year went into hay, pasture, and forage. These facts indicate that the difficulty can be overcome.

### Livestock Aspects of the Problem

Livestock aspects of the problem are not particularly formidable. Farmers have already reduced their hog production, and the purchase of drought-stricken beef cattle by the Government helps to adjust cattle production. A beef-cattle adjustment of broader scope is under consideration. Dairy production can be adjusted rather quickly to less intensive feeding, and poultry production likewise. It is, of course, wrong to suppose, as many nonfarmers do, that a shift from cultivated crops to grass and forage would increase the production of livestock and livestock products. True, pasture and roughage maintain animals exclusively, whereas cultivated crops produce human foods and textiles. But about 70 percent of our cultivated acreage produces livestock feed. Turning cultivated acreage over to grass and legumes would therefore reduce the total amount of animal sustenance available.

In 1919 the area used for pasture in the United States, excluding crop land pastured part of the year, was about 1,055,000,000 acres. This was 55 percent of the country's total land area. It was more than four times the area of crops used for feeding livestock. Nevertheless, the contribution of pastures to the sustenance of livestock was slightly less than the contribution of the crop land. There has not since been much change in the proportion of pasture to crop land, taking the country as a whole. But more than half the pasture is arid grassland and desert shrub land too dry for crop production. More than one-fifth is forest and cut-over land, the use of which for pasture is usually less important than its use for the production of

wood. It is not in such areas that the big opportunity exists to improve the farm situation by growing more grass and forage, but on the improved land—on the land in farms. Many farmers in all parts of the country could advantageously keep more of their land in permanent grass and legumes. They could increase the advantage by good care of pastures and by producing good quality roughage. This change will come about spontaneously to some extent. It is taking place already. Recognition of its economic soundness, possibly coupled with Government action to smooth out discrepancies between individual interest and collective interest, should forward it greatly.

### More Grass Would Lessen Drudgery

There is another reason for the shift which should not be undervalued. Grassland farming takes less work than high-pressure plow-land farming. Generally speaking, it provides a pleasanter farm life, with lower operating costs, less man-killing and woman-killing drudgery, and more leisure. This is as sound a business reason for the change as any of the cost-saving, price-raising features. Hustling used to be a part of the farm creed, but it can be overdone. To spare the farmer's labor, when to use it at the full means overproduction and low prices, is the most obvious common sense. In short, the considerations which make desirable a larger place for grass and forage in the farm economy touch the human as well as the monetary aspect of farming.

### WILDLIFE CONSERVATION

The land-utilization program affords a long-awaited opportunity to restore and increase valuable forms of American wildlife through the establishment of an extensive system of waterfowl refuges and the improvement of environmental conditions for the birds. Millions of acres of land and water that originally produced an abundance of game, fur bearers, and fish were destroyed, so far as these resources were concerned, when subjected to unsuccessful agricultural operations. This factor has been one of the most important of all the causes that have contributed to the rapid decrease of wildlife during the past half century. The restoration of these tracts to productiveness in terms of forests and wildlife is a principal and worthy objective of the land-utilization program.

Under the restoration plan, \$8,500,000 of emergency funds has been set aside for use by the Bureau of Biological Survey for the acquisition, development, and administration of wildlife refuges. Surveys have been completed or are under way on such tracts as are situated along the principal flight lanes of the migratory wild fowl. Acquisition has already begun. Areas acquired or in process of acquisition on August 6, 1934, include the following:

|                          | Approximate<br>acreage |                               | Approximate<br>acreage |
|--------------------------|------------------------|-------------------------------|------------------------|
| Lake Mattamuskeet, N. C. | 50,000                 | James River, N. Dak.          | 70,000                 |
| Beltsville, Md.          | 800                    | Lake Andes, S. Dak.           | 16,000                 |
| Mud Lake, Minn.          | 50,000                 | Medicine Lake, Mont.          | 15,000                 |
| Union Slough, Iowa       | 5,000                  | Turnbull Slough, Wash.        | 5,000                  |
| Wingo Swamp, Mo.         | 15,000                 | Lake Malheur, Oreg.           | 80,000                 |
| White River, Ark.        | 49,000                 | Spalding Ranch, Calif.        | 15,000                 |
| Des Lacs, N. Dak.        | 75,000                 | Upper Mississippi River Wild- |                        |
| Mouse River, N. Dak.     | 80,000                 | life Refuge                   | 1,000                  |

These lands will be set aside as inviolate sanctuaries for migratory game birds. Because of their situation and character, the most valuable crop that they can produce is wildlife, and the areas will be managed for this specific purpose. Their usefulness will not be limited, however, to their effectiveness in increasing the supply of game, birds, fur bearers, and fishes, but will be reflected in benefits to agriculture and forestry and to human health and safety. The conditions most favorable to wildlife are identical with those that reduce erosion and promote flood control and soil improvement by the conservation of water resources and the production of heavy growths of vegetation for food and cover. The development of the refuge system will include the retention of higher water levels by the construction of small dams and dikes and the flooding of dry lands by diversion, employing inexpensive methods of construction. Pollution of water sources within these areas will be eliminated, and adequate fireguards will be furnished.

### Scope of Wildlife Conservation

The development of wildlife as a national resource in connection with a general land-utilization plan should embrace not only national-forest, national-park, Indian-reservation, and State lands but should extend to parts of the unallotted public domain. A comprehensive system of Federal wildlife refuges contemplates including areas on the public domain that under proper administration would have a higher value for such game as mountain sheep, antelope, mule deer, and sage hens than for any other land use. On other parts of the public domain the plan contemplates control of the grazing of domestic stock, with due regard for the reasonable needs of the native species of game.

One million dollars from emergency relief funds has been set aside by Executive order for the acquisition of migratory wild-fowl refuges. One and one-half million dollars of the funds provided for the withdrawal of submarginal lands will be devoted to the acquisition of tracts peculiarly suitable for the production of waterfowl, fishes, and fur-bearing animals. Other submarginal tracts which, while not so well adapted to aquatic life, can be developed to meet the vital requirements of upland game species will be purchased direct by the Submarginal Land Committee and turned over to the State conservation agencies for administration as wildlife sanctuaries or demonstration areas. Three and one-half million dollars of drought relief funds will be used to purchase lands adaptable for wildlife sanctuaries within the drought regions and 2½ million dollars of Public Works funds will be available for engineering operations to restore and control water levels, to stop soil erosion, and to improve food and other environmental conditions on Federal wildlife refuges.

On March 16, 1934, the President approved the Migratory Bird Hunting Stamp Act, which provides for the issuance through post offices of a Federal hunting stamp at a fee of \$1. The stamp must be in the possession of every person over 16 years of age who hunts ducks, geese, or brant. It is estimated that the annual revenue from the sale of these stamps will be between \$600,000 and \$1,000,000, of which 90 percent will be expended by the Biological Survey in the acquisition, improvement, and maintenance of sanctuaries for migratory waterfowl.

## SOCIAL AND ECONOMIC ASPECTS OF FORESTRY

We solve only half the recovery problem when we stop producing surpluses. It is equally important to start producing something else. Curtailing production in certain lines without increasing it in others simply means creating more unemployment. There must be positive as well as negative readjustments; new jobs must replace old. Undoubtedly our greatest single opportunity to accomplish this end lies in forest improvement and conservation, through which we may furnish noncompetitive employment and permanent new sources of income. For much of our land forestry and agriculture are alternative uses. Fully one-third of the land in the continental United States is actual or potential forest land. There is no surplus of growing trees, but, on the contrary, an increasing need to guard against a future shortage. Forest industries can be developed to support many more people than they do at present without the slightest risk of glutting the market. Indeed, an increase in the forest uses at the expense of the agricultural uses of land would tend strongly to improve the general economic balance.

Accordingly the Department, through its Forest Service, is giving greatly increased attention to the protection, the development, and the permanent upbuilding of our forests. It is accelerating the program, not only to furnish noncompetitive employment on the land and to lighten the burden of relief but to put our timber on a sustained-yield basis—to get it handled as a crop and not as a deposit of ore. In this great enterprise three requirements stand out: (1) The acquisition of forest land by public agencies; (2) the restoration of this land to profitable timber production through fire prevention, replanting, and judicious cutting; and (3) extension of adequate fire protection to a larger proportion of private lands with recognition of the fact that private owners should cease "butchering" the timber, and should make provisions for future crops as they cut. In all three directions progress can be reported. Land acquisition by public agencies has been speeded, forest improvement has been forwarded through a public-works program, and forest industries under N. R. A. codes have assumed definite responsibilities for maintaining the productivity of timberlands.

As is well known, the Forest Service has battled for many years against short-sighted practices in the timber industry. This country's timber industry began with enormous raw resources—with virgin stands of timber against which no one had any charges. It strove to get out the timber as quickly as possible, and never thought of restoring the growth. Founded and financed on this basis, the industry counted on a short mill life, and on quick liquidation of its investment. In all parts of the country we can see the results in sawdust piles and abandoned towns. Many forest communities that seem still to thrive are nearing the junk heap; they are taking out forest wealth much faster than it can be replaced. If they keep up their present rate of cutting, they will be finished within a few years. In an extensive western area that had 25 sawmills a quarter of a century ago, only 4 remain. There has been an enormous shrinkage in the timber crop. It is the same in the South. In one area typical of many, timber companies removed all the virgin timber, without leaving even seed trees. Fire



caused more destruction. Now the mills are gone, the county bonds are in default, and half the population is on relief.

### Difficulty of Reform

Against such practices it is difficult to make headway, though the forest industries themselves recognize the need of reform. As in other phases of our economic life, the principal obstacle is unregulated competition. Left to themselves, and forced meanwhile to engage in a ruthless struggle for business, the timber companies find it impossible to think of the future. The impulse to cut without providing for regrowth outweighs the public interest in conservation. Public regulation of timber holdings is necessary, and also a fundamental readjustment in the prevailing method of financing the forest industries. Together, these things will promote a sounder forest economy, and lead to permanent communities rather than to abandoned towns. Along with public regulation of private timber holdings should go an extension of public forest ownership; for throughout large areas the problem of forest care and improvement is such that only public agencies can deal with it effectively.

Social as well as economic considerations vest forestry with a public interest. Living in or near the national forests alone are more than three-quarters of a million people partly or wholly dependent on these forests. Forest industries create local markets for farm products, provide work off the farm, increase community advantages, and lighten the burden of taxes. Forest improvement occupies people who might otherwise engage in commercial farming or in other overcrowded work. Forest recreation and wildlife afford sources of income. Forests should be protected and improved, not only to insure the Nation a continuous and adequate supply of forest products but to furnish employment and build stable communities. Moreover, their indirect value as a source of income is enormous. The forests help to protect growing crops, to control erosion and stream flow, and to conserve water for city needs and for power, irrigation, and navigation.

Hitherto our forest resources have furnished employment mainly through exploitation—through wasteful cutting and through practices that made restocking difficult or impossible. There is a better way. Forests may still furnish materials for the lumber industry, the pulp and paper industry, and other forest industries. At the same time they may be conserved and improved as a source of future supplies by means which furnish employment now and furnish also the guaranty of increased employment in the future. It is possible to remove timber in large quantities and leave the land in a better condition to grow more timber. This is an important object of the emergency conservation program. Following the creation of the Civilian Conservation Corps, the Government put to work in the forests more than 250,000 unemployed young men and boys, many of whom had never had regular work before. They improved fire-prevention facilities, abated soil erosion, combated tree pests, and improved forest conditions in other ways. Eighty percent of the work was planned and supervised by the Department's Forest Service. The social value of the enterprise, immediate and prospective, is certainly very great.

### An Economic Investment

On the economic side, the work was essentially an investment. It made the forest properties more valuable. The Federal public-works program in forestry had a counterpart in the States that have State forests. Also, the Federal Emergency Relief Administration, the Civil Works Administration, and the National Recovery Administration made funds available for the same general purpose. The Forest Service supervised a total expenditure, Federal and State, of more than \$200,000,000 for regular and emergency work in the forests. Manifold returns may be expected. Public administration of forest lands takes into account many things that private administration inevitably neglects, such as recreational values, grazing and wildlife values, erosion control, and water supplies. Forest conservation and improvement, as conducted during the last fiscal year through regular and special appropriations, works toward a coordination of forest uses, present and future, for the good of the entire Nation. It is an investment which may be relied on to produce dividends.

The Federal program of land acquisition was accelerated during the fiscal year. The Government acquired or placed under contract of sale 4,206,560 acres of privately owned forest land, as against 672,425 acres in the previous year, and a maximum of 547,925 in any earlier year. It is continuing the accelerated purchase program and preparing to establish shelter belts of planted timber throughout a hundred-mile strip of the eastern Great Plains area as a means of retaining soil moisture, checking soil erosion especially by wind, and facilitating the continued agricultural use of the land. The shelter-belt project will furnish part-time employment to many farmers.

### State Participation Essential

To carry through on a national scale the measures of forest-land acquisition, reforestation, and forest improvement necessary to make the forest resources fully useful will be a prodigious long-time task. Extensive State participation is essential. The Department last year recommended an acquisition program involving both Federal and State action and placing at 224,000,000 acres the total to be acquired by public agencies within a suggested 20-year period. Since the accomplishment of this program turns partly on the willingness of the States to participate, it is obviously important to seek an understanding with each State as to the character, amount, and location of the land for which public ownership is necessary or desirable, and as to how the task involved should be apportioned. The National Resources Board and the Land Planning Division of the Agricultural Adjustment Administration are assembling data relating comprehensively to land and water use throughout the country. This study includes the whole problem of forest-land use, forest-land ownership, and the public forest-ownership program necessary to carry out a national land-use plan. State agencies are cooperating.

## NEW FARM LEGISLATION

Congress at its last session passed much legislation of importance to agriculture, including amendments to the Agricultural Adjustment Act, new laws to regulate the production of cotton and of tobacco, a measure authorizing the President to negotiate reciprocal trade agreements with foreign countries, an act authorizing the creation of grazing districts out of the public domain, an amendment to the bankruptcy act granting extensions of time to distressed farmers for the payment of their debts and mortgages, and an emergency appropriation act providing, among other items, \$525,000,000 for relief in drought-stricken areas.

Amendments to the Agricultural Adjustment Act added cattle, peanuts, barley, rye, flax, grain sorghums, sugar beets and sugarcane to the list of basic agricultural commodities. They authorized an appropriation of \$200,000,000 for dairy- and beef-cattle adjustments, and an appropriation of \$50,000,000 to buy dairy and beef products for relief distribution and to reimburse farmers for cattle destroyed in campaigns against tuberculosis and other diseases. The sugar amendments authorized a domestic production of 1,550,000 tons of sugar in the beet-sugar area and 260,000 tons of sugar in the cane-sugar area, and empowered the Secretary of Agriculture to make allotments for sugar imports. They provided also for processing taxes to finance the sugar control, and authorized the Secretary to purchase surplus sugar, not in excess of 300,000 tons, produced in the beet-sugar area and to distribute it for unemployment relief or to dispose of it in other ways consistent with the policy of the act. Still other amendments to the Agricultural Adjustment Act modified provisions relating to the processing tax.

Under the Bankhead Cotton Control Act Congress limited the amount of cotton marketable tax exempt from the 1934 crop, and provided for the collection of a tax from cotton sold in excess of the tax-exempt amount. The Kerr-Smith Tobacco Control Act applied a similar principle to tobacco and imposed a sales tax on all tobacco harvested in 1934-35 except Maryland tobacco, Virginia sun-cured tobacco, and cigar-leaf tobacco.

### Tariff Act Amended

To facilitate the expansion of foreign markets Congress amended the Tariff Act of 1930. It authorized the President, whenever he finds that any excess duties or other import restrictions of the United States or of any foreign country restrict our foreign trade unduly, to enter into trade agreements with foreign countries. These agreements are not subject to Senate ratification.

By the Taylor Grazing Act Congress authorized the creation out of the public domain of grazing districts to comprise not more than 80,000,000 acres. The Secretary of the Interior is to administer these districts under a system permitting bona fide settlers, residents, and other stock owners to graze livestock. In addition the act authorized the Secretary to permit homestead entry in tracts not exceeding 320 acres within such grazing districts when it appears that the land is more valuable for cultivated crops than for native grasses.

New bankruptcy legislation for the benefit of agriculture went into effect under the Frazier-Lemke-McKeown Act. This measure permits farmers who have not succeeded in getting their indebtedness adjusted to petition for bankruptcy and for an appraisal of their property. Appraisers appointed by the court will appraise the property "at its then fair and reasonable value, not necessarily the market value at the time of such appraisal." Then, with the consent of the lien holders, the property may be sold, in whole or in part, to the debtor on certain prescribed terms. These call for the payment of 1 percent interest upon the appraised price for the first year, and thereafter for the payment of a certain percentage of the appraised price, with interest at 1 percent on the unpaid balance, until the end of a 6-year period, when the remaining unpaid balance is due. Should the creditors reject the proposed arrangement the court must stay all proceedings for 5 years during which time the debtor may retain all or part of the property on payment of a reasonable rental. At the end of the 5 years, or earlier, the debtor may pay into court the appraised price of the property subject to reappraisal at the request of any lien holder. In the absence of such request, payment of the appraisal price will fully discharge the debtor and give him title to the property.

The Emergency Appropriation Act made available \$525,000,000 for relief in stricken agricultural areas to be allocated by the President to supplement previous emergency appropriations and for several additional purposes. Another measure authorized a \$40,000,000 appropriation to the Farm Credit Administration for crop-production loans.

### Proposed A. A. A. Amendments

Certain proposed amendments to the Agricultural Adjustment Act did not come to a vote. These related to the enforcement of marketing agreements. All the major producers' organizations, including the National Grange, the American Farm Bureau Federation, the Farmers National Grain Corporation, and the National Cooperative Council endorsed them, as likewise did the Agricultural Adjustment Administration. Their purpose was to restate in explicit terms what the administration believed to be the original intent of Congress. Misleading statements stirred up considerable opposition. Opponents charged that the amendments represented an attempt to enlarge the powers of the Agricultural Adjustment Administration and it proved impossible to smooth out controversial points before Congress adjourned. In the original Agricultural Adjustment Act Congress empowered the Secretary of Agriculture (1) to issue licenses permitting processors, associations of producers, and others to handle farm products in interstate or foreign commerce; (2) to suspend or revoke licenses for violation of the terms and conditions thereof; (3) to fine anyone handling farm products in such a manner without a license; and (4) to require licensees to furnish reports and keep suitable accounts. In attempting to enforce these provisions the Administration met with resistance. Minorities took advantage of technicalities and ambiguities in the law. They strove to prevent the enforcement of licenses and consequently to defeat the purpose of marketing agreements.

Generally it is essential to couple marketing agreements with licenses enforceable against obstructing minorities. Whatever blocks enforcement of the licenses blocks the purpose of the agreements. Accordingly the amendments in question sought to remove uncertainties in the law, and to specify more clearly the Secretary's power to enforce these marketing arrangements against the recalcitrant few. In several cases the lower Federal courts have decided the licensing powers exercised by the Secretary of Agriculture were properly exercised. Litigation and other obstruction nevertheless continued and seemed likely to increase pending a more definite statement of the Secretary's licensing powers.

Marketing agreements covering a great variety of crops were in effect when the amendments were proposed. These agreements covered fluid milk and cream, tobacco, peanuts, rice, California deciduous-tree fruits, Northwest deciduous-tree fruits, California, Texas, and Florida citrus fruits, Flame Tokay grapes, clingstone peaches, canned and fresh asparagus, canned olives, walnuts, raisins, turpentine, and rosin. Licenses regulated the distribution of milk in many large cities. Not including increased returns to tobacco and milk producers, the benefit to farmers from marketing agreements and licenses in the 1933-34 season ran close to \$30,000,000. It would have been larger had the opposition of minorities not hampered the making and enforcement of agreements.

### Opposition of Various Groups

Certain large distributors, processors, and handlers of farm products opposed the amendments. There was some opposition in Congress. The opposition contended the proposed clarification of the Secretary's powers involved an extension to him of additional powers. One objection was that the amendments would have permitted the licensing of individual farmers. Therefore the Administration proposed that a majority of producers affected by any license should have an absolute veto power over any of its provisions. One amendment would have allowed the Secretary, in making contracts with farmers for the reduction of basic crops, to stipulate that the production of nonbasic crops should not be increased. This provision, it was declared, would compel farmers to reduce their total production. No farmer, however, would have been obliged to sign any such agreement. There was nothing in the amendments to change the voluntary character of the adjustment programs. The Senate Committee on Agriculture and Forestry favorably reported the amendments, but they did not come to a vote in Congress.

### GRAIN FUTURES

The Grain Futures Act should be amended and extended. The present law, enacted in 1922, has served well the purpose of a preliminary measure. It has provided a broad foundation of experience upon which to base more complete regulation of the speculative markets. However, the need for amendment and enlargement of powers under the act has been apparent for many years. At the last session of Congress a bill to amend the Grain Futures Act, H. R. 9623, passed the House of Representatives but was not reported out by the Senate

Committee on Agriculture and Forestry in time for Senate action before adjournment. One of the important provisions of this bill was the power given to place a limit upon purely speculative trading on the part of any one person or firm. It provided also for the licensing of commission firms accepting orders from the public and prohibited, under severe penalty, the bucketing of customers' orders, the making of wash sales and fictitious trades, and cheating and fraud in connection with the handling of customers' orders.

There is, of course, a rather wide-spread opinion that speculation is harmful in itself and that curbing or prohibiting entirely dealings in futures would be desirable. The stubborn opposition of the exchanges to Government regulation of any kind, touching even practices which the exchanges condemn, has been largely responsible for this still growing opinion. Thus far the Department has counseled a regulatory policy, one which would preserve and strengthen the futures trading system. It has supported the view that a moderate amount of speculation in commodities gives life and liquidity to the market for such commodities and thus serves a useful economic purpose. But it cannot accept the view that in order to have those benefits it is necessary also to tolerate the evils of unregulated speculative markets, which in the long run far outweigh any possible good results.

For a late example of harmful speculation we need only go back to what happened in July 1933. Speculation in grains, induced in part, perhaps, by talk of monetary inflation, resulted in a much too rapid advance in prices during the period from June 20 to July 18. Commission houses, anxious for business, took and carried large speculative accounts without adequate margins. Large speculative lines were built up out of paper profits, and when the market finally lost its momentum there was no reserve power to sustain values. Over-extended traders could not stand even a small price recession. Consequently, on July 18 and 19, wheat prices broke practically 30 cents a bushel and a serious financial crisis was averted only by the fortunate turn of circumstances.

The effect of the market crash just mentioned was to destroy entirely the morale not only of the professional speculators but of those who speculate moderately and on the basis of conservative appraisement of values. That experience so frightened the speculatively inclined that the grain markets suffered by it for a full year afterward. In this case speculation helped boost prices for a short time, but to farmers who were getting ready to harvest their crops at that time it gave only a false hope. Instead of benefiting by the price advance they reaped the inevitable fruits of overspeculation—extended market stagnation and a price dominated by fear psychology.

## FOOD AND DRUG CONTROL

That the existing Federal Food and Drugs Act has sharp limitations is generally recognized, and the Department has long advocated stronger legislation. In 1933 it prepared a new food and drugs bill, which was introduced in the Senate and considered by the Senate Committee on Commerce. Two hearings resulted in material modifications of the draft. In March last the committee favorably re-

ported the revised bill (S. 2800). This measure retained most of the provisions advocated by the Department for the protection of consumers and would have controlled the traffic in food and drugs more effectively than the existing law. In addition, it would have regulated the cosmetics trade and the advertising of foods, drugs, and cosmetics. Unfortunately, the bill did not come up for passage. At the next session of Congress the Department will again request the introduction of an adequate food and drugs bill.

The measure considered at the last session contained nothing new or startling. It simply provided means to deal with needs that have become more and more evident in recent years. Officials charged with the duty of protecting the public health have time and again recommended the essential features of the measure. Like the existing Food and Drugs Act, it would have benefited all honest manufacturers as well as consumers. Nevertheless, bitter opposition developed. The opposition came not only from interests not too scrupulous of the public welfare but from reputable manufacturers, and even from some consumers, whom misrepresentation of the bill had misled.

Under the Sherley amendment to the existing Food and Drugs Act the Government has the formidable obligation of proving that the claims made in the labeling of patent medicines are both false and fraudulent. This requirement, which the proposed bill would have changed, has been one of the most serious handicaps enforcement officials have had to meet. In one case, that of a horse liniment sold as a cure for human tuberculosis, the Government spent \$75,000 over a period of 10 years trying to get the false claims off the label. Though the first case was tried in 1922, only in March of this year was the manufacturer at last brought to book and sentenced to a fine of \$2,000. Another provision exempting any food product sold under its own distinctive name from all restrictions except those relating to the addition of poisonous or deleterious ingredients had no counterpart in the new bill.

Besides cosmetics and advertising, curative devices and contraptions, and products like the so-called "reducing agents", which are now immune, would have been brought under control. Provisions as to labels were considerably amplified to enjoin not only the truth but the whole truth, that the consumer might have sufficient information to protect both his health and his pocketbook. The bill also gave the Federal Government authority to set up a standard of quality and identity for all food products, and to establish safe tolerance for poisons in foods. As the light fines imposed under the present law seem to be regarded by some manufacturers as no more than license fees for carrying on an illegitimate, if profitable, business, the bill provided more drastic penalties, with injunctions against chronic offenders.

### Right of Self-Medication Not Denied

One false objection was that the bill denied the right of self-medication. Actually it would have made self-medication safer. It would have driven from the market drugs that are dangerous for the layman to prescribe for himself and would have permitted only such claims for home medicines as they could fulfill. Another

groundless objection was that the proposed law would have doomed advertising by insisting on the truth. This charge involves the ridiculous assumption that American business depends on dishonesty. Still another misrepresentation was that the bill would have allowed only factual advertising. The Supreme Court has definitely recognized "trade puffing" as legitimate.

False advertising should not be continued without restraint. In proportion as buying power goes for harmful things consumers have less to spend for things that are worth while and honest advertising is less effective. Honest industry should welcome an advertising standard to which its practice may profitably conform. Advertisers can tell the truth and still do business profitably.

Opponents of the proposed food and drugs bill alleged also that it conferred czaristic power upon the Secretary of Agriculture. This allegation had mainly to do with provisions authorizing control of food and drugs traffic through licensing, where the public health could not be protected otherwise. Opponents objected likewise to a provision for the establishment of permissive supervisory inspection. Subsequently the sea-food industry requested this type of regulation for itself. It was granted through an amendment to the existing Food and Drugs Act.

Pressure of other legislative business, as well as the objection of certain interests, prevented enactment of the bill. Pending its reintroduction, the Department will continue to urge the wisdom and necessity of its provisions.

Despite the shortcomings of the existing law, its enforcement wrought further improvement in our food and drug supply during the last year. Routine enforcement directed regulatory action against violations affecting the public health, violations involving filth or decomposition in foods, and violations resulting in economic fraud. In the last fiscal year the Food and Drug Administration reported more than 1,000 shipments of foods, drugs, and stock feeds to the Department's solicitor, as a basis for criminal prosecutions. It caused seizure actions to be directed against 1,226 consignments of foods, 435 consignments of drugs, and 24 consignments of stock feeds.

### Sea-Foods Problem

A major problem is the protection of the consumer against filthy and decomposed food products. Because of their highly perishable nature, sea foods require special attention. Such products, both canned and fresh, create many occasions for seizures and prosecutions. Protection of the consumer requires the scrupulous attention of manufacturers to the character of the raw fish products, to rapid and sanitary handling, and to proper sterilization. The previously mentioned amendment to the Food and Drugs Act allows the Secretary of Agriculture, at the request of any packer of sea foods sold in interstate commerce, to inspect the product at the manufacturing plant. Manufacturers may appropriately label goods that have passed the inspection. They receive the service at cost.

Research in the Food and Drug Administration developed some new methods to reveal the presence of filth in dairy products. These methods led to the seizure last year of numerous consignments of low-grade butter of the type known as packing-stock butter. Among



the seizures were some consignments of alleged creamery butter. The resulting legal actions stimulated dairy processors to improve the methods of making and handling butter.

Another big problem is the control of poisonous spray residue. The Food and Drug Administration maintains an extensive surveillance of interstate shipments of fruit and vegetables by both truck and rail. Fruit and vegetable producers and dealers are beginning more and more to recognize the importance of spray-residue control. State authorities support the movement vigorously. In consequence the number of legal actions necessary in the last fiscal year declined. Only 58 seizures of fruits and vegetables for excessive spray residue had to be made in 1934 as compared with 241 in the fiscal year 1933.

### Liquor Adulteration and Misbranding

Prohibition repeal created new problems for the Food and Drug Administration. Under prohibition the regulation of alcoholic liquors was the task of other Government agencies. When traffic in alcoholic beverages became legal, the Food and Drug Administration had to apply to it the terms of the Food and Drugs Act. It did not receive additional appropriations for this purpose. As may easily be imagined, it would be possible to divert to this one purpose the entire appropriation for enforcing the Food and Drugs Act. Since this would be manifestly inexpedient, the administration concentrated attention on the most serious types of liquor adulteration and misbranding.

In accordance with this policy the administration made a survey of whiskies labeled as medicinal. It caused actions to be instituted against brands not up to the requirements of the United States Pharmacopœia and not clearly labeled to show their deviation from that standard. Misbranding of beverage whisky amounting to definite misrepresentation prompts administrative action. However, the character of the liquor traffic obviously makes special legislation necessary. Many types of liquor adulteration and misbranding cannot be proved, or even detected, by chemical analysis.

Among the byproducts of prohibition repeal are candies containing alcohol in liquid centers. Such articles are vicious, particularly in view of their consumption by children. Confections containing alcoholic, spirituous, and vinous liquor have been held illegal under the Food and Drugs Act from the beginning. They do not become legal simply through the repeal of prohibition. Purveyors generally bootleg these preparations. It is difficult to track down and establish the interstate character of the shipments. Nevertheless, the administration seized 18 consignments and practically drove liquor candies out of interstate commerce.

### RESEARCH

Research is the Department's biggest job; indeed, research is the foundation of everything it does. It could not help farmers to plan their production, to reduce their costs, to fight the diseases and pests that attack animals and plants, to produce better crops and live-

stock, and to market their products efficiently, without first studying how these things may be done.

Yet some persons believe there is a conflict between agricultural research and the need to adjust agricultural production. Agricultural science enables farmers to increase crop yields per acre, and to increase the output of meat and milk per unit of feed consumed. How, it is asked, can this be reconciled with the present necessity to restrict certain kinds of farm production?

The contradiction is unreal. When farm production exceeds the demand, it should be reduced not by discarding science, but by planting fewer acres or raising fewer animals. There is no advantage in allowing costs per unit of production to increase, as would be the result of giving science a holiday. By letting pests and diseases ravage their crops, and by harvesting inefficiently what remained, farmers could doubtless reduce their output, and raise the prices of farm commodities. But they would increase their unit costs of production out of all proportion to any conceivable gain in prices, and would produce goods of low quality.

It is therefore wrong to say that agricultural research should be curtailed when crop adjustments are in order. In fact, the need for research is greater then. The character of the work should perhaps be somewhat changed. The crisis through which American agriculture is passing gives a new direction to agricultural research and a new importance to certain kinds. Especially it emphasizes the worth of investigations having an immediate social application.

In shaping its research to meet the emergency, the Department has kept this principle firmly in mind. It has strengthened various studies promising wide social benefit, not only to farmers but to other economic groups. Examples are the economic investigations that furnish a basis for crop adjustments; the soil surveys and land classifications that influence subsistence homesteading, forestry, erosion control, and wildlife conservation; and diet studies that serve to guide public agencies in dispensing relief. We need technical progress in the distribution as well as in the production of wealth. Research devoted to that end joins economic science to production science without detracting at all from the value of the latter. It produces benefits that cannot easily be monopolized. Much research of this kind we have had, of course, for a long time. As we move away from ruthless competition toward efficient social cooperation, the scope and the need for it increase.

### Social Value of Emergency Studies

Many studies made possible during the last year through emergency appropriations have outstanding social value. This Department gathered facts of tremendous national significance in a study of tax delinquency, which indicated the extent, the character, and the causes of the trouble. Results of this investigation may profoundly influence Federal and State policy in reallocating land to better uses. Emergency funds facilitated animal- and plant-disease control and work on problems created by the drought. Emergency funds also aided research as well as action against bovine tuberculosis, Bang's disease, tick fever, endemic typhus, white pine blister

rust, infestations of grasshoppers and chinch bugs, Dutch elm disease, and other scourges.

Special appropriations from Congress and grants from N. R. A., P. W. A., and C. W. A. financed statistical and economic studies, a farm-housing survey, and numerous miscellaneous activities. This Department furnished technical help to numerous Government agencies, in connection with unemployment relief, subsistence farming, work in the Tennessee Valley under T. V. A., code making and enforcement by the N. R. A., land planning by the National Resources Board, and tariff negotiations by the State Department. Investigations went forward looking to the solution of the spray-residue problem, the increased utilization of farm byproducts, the better adaptation of farm implements to farm needs, the breeding of drought-resistant agricultural plants, and the development of grasses suited to dry areas.

The Department cooperated extensively with the State experiment stations. The cooperative studies included surveys of soil resources in practically every representative agricultural area in the country; soil use and conservation; prevention of soil losses through erosion; establishment of superior types of farming; improvement of irrigation practices; more efficient and economical use of fertilizers; improvement of corn and other cereal crops, and of cotton grades and prices; breeding of potatoes resistant to disease; development and establishment of type varieties of vegetables; use of parasites to combat the oriental fruit moth; survey of plant diseases; increasing the efficiency of oil sprays for combating insect pests; improvement of conditions of livestock production, marketing, and meat utilization, and of the quality and palatability of meat; determining the relation of the conformation and anatomy of the dairy cow to productive ability; development of beefiness and milk production in dual-purpose cattle; use of proved sires in breeding for high milk and butterfat production; prevention and eradication of Bang's disease of cattle; establishment of a farm real estate tax index, and the use of land for grass and forage.

#### Federal Funds for Experiment Stations

The Secretary of Agriculture is charged by law with the responsibility of administering the Hatch, Adams, Purnell, and supplementary acts appropriating Federal funds for the support of the State agricultural experiment stations and of those maintained in Alaska, Hawaii, and Puerto Rico, and of coordinating the work of the Department with that of the stations. The funds so administered amounted to \$4,439,130 during the year ended June 30, 1934—\$90,000 to each State, \$15,000 to Alaska, \$62,270 to Hawaii, and \$41,860 to Puerto Rico, out of a total of approximately \$14,775,000 available to these stations from all sources. The funds were used for the prosecution of about 6,000 research projects, having as their primary object the betterment of farming and the rural home. About 800 of the projects were carried on in cooperation with the Department of Agriculture. The Office of Experiment Stations represents the Secretary of Agriculture in administering the Federal funds for the stations.

## GENETICS

Probably no single factor in the research program in the Department is more important than what we have come to call the search for "superior germ plasm." Briefly, this consists of the discovery and development of superior seed stock through applications of the art of breeding and the principles of genetics. Such superior material then becomes available for use by producers of grain and livestock, as well as to the scientists and practical breeders for further improvement.

The isolation of strains having superior germ plasm is of tremendous value in efficient production. Superior germ plasm helps the farmer, not only to produce more per unit, but also to produce plants and animals of better quality and greater usefulness. In the plant field much has already been accomplished in this respect and although progress has been much slower and less spectacular in the animal field, many of the principles of inheritance are being applied in the development of new and superior strains.

A recent exhibition displayed about 150 superior new varieties of field crops. By the use of three chief breeding principles (introduction, selection, and hybridization) plant breeders have developed hundreds of new varieties which are high-yielding, disease- and insect-resistant, of high quality, and superior in many ways to the ordinary varieties.

New, superior varieties of wheat, such as Turkey, Marquis, Kanred, Ceres, Federation, Tenmarq, Redit, and Oro; varieties of oats, such as Iogold, Albion (Iowa 103), and Markton; and varieties of barley, such as Hannchen, Trebi, and Gladron, to mention only a few, are now cultivated on more than 40 millions of acres of crop land each year. Apples of higher color and quality and strawberries adapted to canning and freezing are now available. Melons and peas resistant to wilt have been developed. Potatoes, such as the Katahdin, which is resistant to some of the baffling virus diseases, have been developed by Department plant breeders.

### Progress With Livestock

In the case of the larger animals, livestock improvement involves such a long-time, expensive program that it is impractical to raise experimentally the large populations which are necessary for efficient progress. Nevertheless, the fundamental principles of inheritance are essentially the same in the animal as in the plant kingdom. It has been clearly established that genetic factors concerned with disease resistance, growth, body size, performance, and fecundity can be obtained in relatively homozygous conditions by application of the proper system of breeding and selection. Through introductions of the proper animal material and application of the correct breeding system, it is not only possible to concentrate important hereditary factors in strains of domestic livestock but this is already being accomplished.

For instance, one outstanding achievement in cattle breeding is the development of the Santa Gertrudis strain of cattle by practical cattle breeders in Texas. The Department has under way a similar program in which the Brahman and Aberdeen-Angus breeds of cattle

are being crossed for the purpose of combining certain desirable characteristics in homozygous condition. A similar experiment is being carried on simultaneously in which the imported Africander cattle are being crossed with the Aberdeen-Angus for a similar purpose.

By combining the Rambouillet and Lincoln breeds of sheep the Department has developed a strain, known as the "Columbia type" sheep, which is particularly adapted to the conditions found in the Northwest intermountain region. The Department is also experimenting with combinations of Southdown and Corriedale breeds of sheep for the purpose of producing more efficient and true-breeding strains of sheep for hothouse lamb production. Recently the Department imported 24 Landrace and 6 Yorkshire hogs from Denmark for use in the development of superior strains of hogs. An important part of the improvement program with cattle, sheep, and swine consists of record-of-performance tests, in which efficiency of feed utilization and quality of animal products are evaluated.

For the last 15 years the Department has followed a constructive breeding program in its dairy herds, using sires that possess a high degree of genetic purity for the factors that determine high milk production as indicated by the production performance of their daughters. By concentrating the superior germ plasm of such sires it is making progress toward the development of strains of cattle that will be pure in their inheritance and transmitting ability for a high level of milk production.

In poultry, Department workers have demonstrated that first-year egg production is determined largely by four heritable characters, sexual maturity, rate of laying, absence of broodiness, and persistence of production. By the proper selection of breeding stock, based on the progeny test, it is possible to develop superior laying strains that are comparatively homozygous. For the past decade poultry breeders in several States have been carrying on record-of-performance work on their own premises, with the object of identifying superior sires and dams and perpetuating superior strains of laying stock. The various State rules and regulations governing the poultry record-of-performance work are standardized through an unofficial organization known as the "United States Record-of-Performance Federation."

#### Interbureau Committee on Genetics

No conservation of natural resources can mean more to posterity than the production of strains of plants and animals relatively homozygous for efficient production of high quality. The Department of Agriculture is devoting itself to the long-time job of developing strains of this type. An interbureau committee is taking an inventory of the Department's genetic accomplishments, preparatory to further intensive research, and preparing to catalog, for the use of scientists and farmers generally, the superior strains of plant and animal breeding stock now available.

#### PROGRESS IN PLANT BREEDING

Research designed to increase the efficiency, stability, and quality of crop production has proceeded along the same general lines as in previous years, but on a scale reduced to meet the drastic cuts in

appropriations for this purpose. In spite of the reduced support, the plant scientists of the Department have continued to make notable contributions to a more efficient agriculture and thereby to the general welfare of all of the people, urban and rural.

When the results of plant improvement are measured in terms of acre yield, the larger average yield over a period of years frequently is due more to preventing ruinously low yields in occasional years than to raising the general level of yield. Thus the improvement tends to stabilize production and to permit more definite planning. Stem rust long has taken its toll from the Nation's wheat crop. The disease is not equal in severity in different years, but may be either negligible or devastating in its effect on susceptible varieties. The breeding of more resistant varieties by the Department in cooperation with the State experiment stations has reduced markedly, though not eliminated, the hazard of rust damage from wheat growing in the northern Great Plains, by providing Ceres, Thatcher, and other resistant sorts. Similar advances have been made in reducing the hazards due to winter-killing and smut injury.

Developments in oat breeding tend to stabilize the acre yields of that crop. Losses due to crown rust, stem rust, and the loose and covered smuts of oats have been severe in some seasons. Varieties already have been developed that are resistant to one or more of these diseases. More recently, strains have been obtained through hybridization and selection that are resistant to all four. It remains to determine by adequate field trials that these new strains have no serious unrecognized faults before they will be ready for distribution.

Plant improvement rarely is devoted to the sole purpose of increasing yield. Quality is equally important. Rust and smut decrease both the yield and the quality of wheat, and the gains in quality from the development of resistant sorts are frequently more important than the gains in yield alone. A few years ago practically all of the wheat from some of the shipping stations in the Pacific Northwest was very smutty, with consequent heavy dockage and a very low price. With the use of such smut-resistant varieties as Ridit, Albit, and Oro in these areas, most of the wheat now coming from the same stations is smut-free and without penalty.

Progress in developing better strains of corn by selection and crossing has been continued. Larger yield is not the only objective. The corn breeder strives to develop hybrids that stand up better in storms and produce a smaller proportion of unsound low-grading grain. During the past year it was discovered that strains of corn differ markedly with respect to the constitution of their starch. In some the percentage of amylose, the valuable constituent, was as high as 93 percent, and in others as low as 63 percent. This fact provides a basis for breeding varieties of much greater value to the starch industries than any now existing.

### New Varieties of Fruits

Improved varieties or practices making for a better quality of product are even more important with fruit and vegetable crops than with field crops. Through breeding and selection the Department recently has produced a number of varieties of strawberries

having special merits as to quality and adaptation. The Dorsett and Fairfax, introduced in 1932, have unusually high dessert qualities. Others are the Blakemore, excellent as a preserving berry; the Bellmar, a berry of good quality that ships well; and the Southland, which is especially adapted to southern latitudes and has high merit for the home garden.

Losses due to alfalfa wilt are not alone those apparent in lower yields from year to year. Without this disease, the life of established fields would be materially longer. Growers would save on costs of reseeding and would avoid losses incident to the more frequent establishment of new fields. Foundation stocks of alfalfa that are vigorous and wilt resistant have been isolated by self-fertilization and selection, an important step toward the control of alfalfa wilt.

New fruit, vegetable, and field crops introduced by the Department constitute a valuable element of our present agriculture. The introduction of Korean lespedeza, introduced in 1921, has been extended to more than 5,000,000 acres with gratifying results. This legume has shown ability to withstand unfavorable conditions of various kinds. Even during the severe heat and drought in 1934 it maintained itself in Missouri and provided a little grazing when other crops failed.

The Department has obtained varieties of soybeans adapted to areas for which varieties previously were not available. Earlier maturing strains found among the Department's extensive recent introductions from abroad will permit utilizing this valuable crop farther north than heretofore. One of these, the Cayuga, may be counted on to mature in much of New York during any normal season. Its value as a home-grown source of protein for the extensive dairy industry in that State has been demonstrated.

The development of a variety resistant to some disease or insect pest may permit continued production of a particular crop in a locality that otherwise would have to make expensive shifts in farm practice or even be abandoned for agriculture. The success of the Department some years ago in rehabilitating sugarcane growing in Louisiana and the other Gulf States by the introduction of mosaic-resistant varieties is well known. This has maintained a production worth more than \$20,000,000 annually, and conserved investments in mills and special equipment of more than \$100,000,000.

Through further importations and breeding, other resistant varieties have been obtained possessing characteristics which adapt them to special conditions of soil, harvest, and the like. During the present year two new varieties of sugarcane having additional superior characteristics, C. P. 28/11 and C. P. 28/19, were released by the Department for general culture. The problem does not stop here however. During recent months a new form of the mosaic has been found in commercial fields of hitherto resistant varieties of cane. This calls for immediate steps looking to the finding and breeding of varieties resistant to the new menace as well as the old.

### Influence of Light on Germination

Results that may have importance with lettuce breeding and production have just been obtained in studies of the influence of light on the germination of lettuce seed. Lettuce seed has a period of

dormancy following maturity, during which it will not germinate under ordinary conditions. Thus, seed produced in the regular lettuce-seed sections of northern California is harvested in August and cannot be used for early planting the same fall in the Imperial Valley. It has just been determined, however, that some kinds of lettuce seed, if soaked and exposed for a few minutes to daylight, will germinate immediately. The experiments have not gone far enough to predict whether this treatment will be useful in connection with commercial lettuce production. It is almost certain, however, to be of value to lettuce breeders in shortening the time between generations.

It is not always possible to breed a variety resistant to some disease, and other methods of control must be developed. Recent investigations in controlling tobacco mildew or the blue-mold disease have produced important results. In repeated experiments excellent control was obtained in 1934 by maintaining the tobacco beds at night temperatures of above 70° F. during periods favorable for disease activity. It appears to be unnecessary to begin heating to maintain temperatures until after the disease is evident, and relatively crude methods of heating can be used. This discovery will materially reduce the cost of obtaining stands of tobacco without significantly increasing final production.

The Department's investigations with the apple, peach, and orange have shown clearly that the removal from the tree of part of the crop early in the season results in much higher quality and size of those fruits left. The larger leaf area per fruit after the thinning makes available more carbohydrates and other elaborated foods per fruit, resulting in increased size and sugar content. Peaches and apples develop a brighter color over a greater proportion of their surfaces. Biennial bearing varieties of apples tend to produce annual crops if the fruit thinning is severe enough that sufficient foliage is available not only for developing the crop but for forming fruit buds in addition. All of these research results are being put into profitable practice.

## DAIRY INVESTIGATIONS

As a result of the Department's progress in developing pure-line-production herds and in spreading genetic knowledge, farmers and breeders are becoming more and more interested in obtaining proved sires to head their dairy herds. At present the number of proved sires is very limited, but the breeding work has demonstrated that the sons of proved sires can be used with greater assurance that they will transmit higher production than the sons of untried bulls. As a part of the Department's breeding experiments, all young sons of proved sires are placed in neighboring farm herds to be proved. The 505 daughters of 52 young Holstein-Friesian bulls loaned to farmers near the Huntley, Mont., station have production records that exceed their dams' records by an average of 1,601 pounds of milk and 69 pounds of butterfat. The 145 daughters of 16 young Jersey bulls loaned from the Beltsville, Md., herd have records that exceed their dams' records by an average of 817 pounds of milk and 56 pounds of butterfat.



### Criteria for Judging Cattle

Investigators in the Department are studying the relation between the outward conformation and the size of the internal organs and body parts, and the relation between both conformation and internal anatomy and producing capacity, for the purpose of providing a scientific basis for judging. They have found marked variations in the size of the internal organs of animals of similar conformation. For example, little relation exists between width of chest and size of heart and lungs, whereas the depth of chest is rather definitely correlated with the size of these organs; size of heart is rather closely correlated with body size, body circumferences, and body depths but less closely with height, widths, and lengths of body; lung weight is more highly correlated with lengths and depths of body than with other body measurements; and length of intestines is more closely correlated with body size, weight, and body depths than with other body measurements.

Milk secretion has been shown to be a continuous process except as it is interfered with by fright, pain, or internal pressure due to accumulation of milk in the udder. Moreover, it has been found that practically all of the milk obtained at a milking is in the udder when the milking process commenced rather than being secreted during the brief period of milking. The discovery led to experimental work which has shown that incomplete milking does not cause udder troubles nor tend to dry off cows quicker. This information may lead to the discontinuance of the laborious chore of stripping after machine milking.

Dairymen have long been urged to grow and feed more roughage, as a practical means of cutting feed cost of milk production. Recent investigations in the Department indicate that it is important to use good quality roughage, especially roughage with a high vitamin A activity, because of its beneficial effect on the general health and reproductive functions of dairy cows, and also on the nutritive value of their milk. Many premature births are caused by vitamin A deficiency, a condition that might be avoided by proper attention to the quality of the roughage fed. In seasons of exceptionally dry pastures this deficiency is likely to be aggravated, and may call for supplemental feeding with cod-liver oil, carrots, or other feeds rich in vitamin A.

Feeding experiments have shown that roughage is more nutritious and more palatable when cut in the earlier stages of maturity than when allowed to ripen before cutting, and the immature cuttings yield more protein per acre. Furthermore, at field stations cows have produced 75 percent as much butterfat on good roughage alone as they produced when fed heavily on grain with roughage. This information indicates that dairy farming, in many instances, would be more profitable if the farmer devoted all or most of his land to pasture and forage crops, and fed grain only when the prices of butterfat and the additional yield warranted the purchase of grain. Such a "back to grass" program would not only put the individual dairy farmer on a more permanently profitable basis, but would tend to retard production of a surplus of dairy products.

## THE PAST YEAR IN AGRICULTURE

### Miscellaneous Dairy Studies

Ice-cream studies in the last year have resulted in the development of a method by which the density of ice cream can be increased to any desired point by pressing to remove the air. The Department has perfected a method for merchandising natural cheddar cheese in small, attractive, consumer-size packages. Such packages should have wide-spread consumer appeal and should stimulate consumption. The process consists essentially in sealing the freshly made curd in valve-equipped cans, in which normal ripening takes place, and in which the cheese is also retailed to the consumer. Such a package may carry the name of the cheese maker direct to the consumer and should encourage manufacturers to make a high-grade product. Several companies have started packaging cheddar cheese in this way. Tests made of methods and materials for wrapping swiss cheese when it is cut for distribution to the retail trade indicate that it is possible to wrap the cheese so that it may be held for about 2 weeks without molding or noticeable loss of moisture, depending on the temperature at which the cheese is held. Dairy scientists this year developed a suitable package for merchandizing skim-milk powder in small consumer-size units. Making skim-milk solids available to the average household should increase the sales of this valuable product for use in home cookery.

### ANIMAL INDUSTRY PROBLEMS

Early in 1934 Federal funds for the eradication of bovine tuberculosis became available through the Civil Works Administration. Several States assigned additional veterinarians to the work which was conducted under the joint supervision of Federal and State authorities. Local men assisted the veterinarians. During the few months that the C. W. A. project was in operation, approximately 1,000,000 cattle were tuberculin-tested in eight States. This completed the tuberculin-testing of cattle in many counties, and placed these counties in the modified-accredited area; that is, in the area in which the prevalence of the disease has been reduced to less than 0.5 percent. For this project the Civil Works Administration provided approximately \$170,000.

Certain amounts later provided in the La Follette amendment to the Jones-Connally Cattle Act were allotted to the Bureau of Animal Industry to further the eradication of tuberculosis and of Bang's disease or infectious abortion.

Bang's disease exists in practically all localities where cattle are handled. It is a serious menace. In cooperation with the States, the Department proceeded with eradication work. The project provides for the payment of a Federal indemnity for cattle that react to the disease. Participation is voluntary on the part of the cattle owner, but if he participates he must agree not only to the testing of his cattle but also to the management of his herd to prevent reinfection.

The maximum Federal payment for grade cattle reacting to the Bang's disease test is \$20. For purebred registered cattle it is \$50. Up to the date of this report no State except Virginia has made an

indemnity payment. Virginia has made a limited appropriation for the purpose. The owner of reacting animals receives the net salvage in addition to the Federal payment, though he may not receive more than the appraised value of the animals. Approximately \$17,000,000 has been tentatively allotted for the Bang's-disease project. The appropriation is available until the end of the calendar year 1935.

In connection with the enforcement of the Packers' and Stockyards' Act, a Federal statutory court upheld an order prescribing reasonable rates to be charged by the stockyard company in Omaha, Nebr., and the rates were put into effect. The estimated saving to farmers who use the Omaha livestock market is about \$100,000 annually. The Secretary of Agriculture also issued orders prescribing charges at the stockyards in St. Joseph, Mo., and commission rates at the livestock market in Chicago, Ill. Federal courts temporarily restrained the enforcement of these orders. Pending a decision on these cases, the courts have required the stockyards and market agencies affected to set aside funds representing the difference between existing rates and the rates ordered. In the event that the cases are decided in favor of the Government, the impounded funds will be distributed to the shippers. The savings to farmers, if the orders are upheld, will be about \$700,000 annually.

In livestock research record-of-performance studies with cattle and swine continued to demonstrate the wide variations which exist in the breeding efficiency and production efficiency of animals of similar ancestry. For example, there was a difference of nearly 5 months in the time it took beef steers of the same breed to reach finished weights of 900 pounds. Also calves that were heaviest at birth made the most rapid growth, required less feed per 100 pounds of gain up to weaning age, and reached final slaughter weights in the shortest time. However, no relationship was found between the weight of the calves at birth and the carcass grade they attained. In tests of dual-purpose bulls of similar breeding, individual sires differed widely in the transmission of the ability to produce beef efficiently. Similar wide variations in performance were found also with swine.

### Meat Investigations

Meat investigations conducted by the Department in cooperation with State experiment stations and other organizations furnished important information on the factors which influence the quality and palatability of meat. The high value of good pasture for meat production was again demonstrated in a cooperative study with the Tennessee Agricultural Experiment Station. Lamb produced on good pasture and ewe's milk was equal in finish and palatability to lamb produced under similar conditions, but with the addition of grain to the ration. With fattened hogs, as the final feed-lot weight and finish increased between 145 and 225 pounds, the cooked meat showed a gradual though small improvement in tenderness, in the flavor of lean, and in the quality of the juice. When hogs were carried to heavier weights and greater finish there was a decline in these characteristics or no further improvement.

### Veterinary Congress

Coming to the United States for the first time in the 71 years of its existence, the International Veterinary Congress held its twelfth convention in New York City August 13-18, 1934. John R. Mohler, Chief of the Bureau of Animal Industry, was elected president. An outcome of the convention was a movement toward increased international cooperation in research and in the dissemination of research results. The veterinary congress discussed the inspection of meat and milk, and manifested special interest in measures for the protection of consumers.

### INSECT PESTS

Unusual weather over much of the country during the last year was favorable for certain insect pests. Many species which normally occur only in limited numbers became abundant and did material damage. In some sections, however, such as the northeastern part of the United States, certain common species were less abundant than usual. Buffalo gnats or black flies occurred in outbreak numbers in parts of the lower Mississippi Valley and caused material losses to livestock and poultry. The green bug, the corn flea beetle, the introduced sawfly which injures wheat and related grains, the pea aphid, and the San Jose scale occurred in outbreak numbers in various regions. The mild winter was favorable to the overwintering stage of the codling moth. The drought in the Middle and Far West favored the increase of grasshoppers and chinch bugs.

That excessive numbers of grasshoppers would occur over a large part of the north-central region was demonstrated by surveys in 1933, which indicated that certain species which migrate long distances would occur in large numbers unless natural causes intervened. To aid in protecting crops in infested areas, Congress appropriated \$2,354,893 and authorized the Department to furnish materials for bait to States willing to organize and finance local campaigns. Many States organized campaigns which were very successful, though in drought-stricken areas crop damage from drought obscured the results.

Excessively large numbers of chinch bugs entered hibernation in the fall of 1933. The mild winter favored their overwintering. They emerged from hibernation and entered the small-grain fields much earlier than usual. This attack caused excessive losses in Iowa, Kansas, Nebraska, Illinois, Indiana, and Missouri. Unusual measures were necessary to protect young corn from the first generation of bugs, which migrated into the corn as the small grains dried up from drought or were harvested.

Congress appropriated \$1,000,000 to purchase materials for the construction of barriers to prevent the bugs from migrating into young corn, and authorized the Department to cooperate with States that would undertake to receive, distribute, and bear the expense of handling and utilizing the materials. In limited sections the first-generation bugs had left the small grains and moved into corn before the cooperative effort to prevent damage by the first generation was under way. Over the area as a whole, however, the control campaign was markedly successful.

### Mosquito-Control Campaigns

The Department cooperated in extensive campaigns to control pest and salt-marsh mosquitoes. In cooperation with the Civil Works Administration, it organized campaigns to control pest mosquitoes in 33 States. This work cost approximately \$1,726,940 and furnished more than 2,805,000 man-hours of employment. The campaigns resulted in material benefit, and received general endorsement. Many communities undertook to maintain the ditches and other devices constructed as a part of the control operations. In many States and localities the work was continued or expanded when the Federal Civil Works projects were discontinued. Besides reducing the annoyance and dangers caused by mosquitoes, the campaigns demonstrated the practicability of mosquito-control operations during the winter. In certain sections along the Atlantic coast it was practical to couple mosquito control with reduction of the number of sand flies, which are a serious pest there.

With the aid of labor supplied through the Civilian Conservation Corps and other emergency agencies, the Department made progress in controlling outbreaks of bark beetles, which are a menace to important forest trees, particularly in the West. It conducted surveys to determine areas where control might be effectively undertaken and to furnish estimates of the cost. In California 22 C. C. C. camps did work to control the bark beetles between July 1, 1933, and April 1, 1934. The benefit should be great and lasting. As evidence of the value of such campaigns, it may be noted that during 1934 only 13 infested trees were located in the Crater Lake National Park. When control operations were undertaken there in 1932, it was necessary to treat more than 20,000 infested trees. Similar results have been obtained in many other sections. Even small projects, as, for example, one conducted in the Kootenai National Forest, have preserved valuable stands of western white pine.

A serious outbreak of the Dutch elm disease, which has caused wide-spread destruction of susceptible elms in western Europe during the past 16 years, was disclosed in parts of New Jersey, New York, and Connecticut, and in the vicinity of New York Harbor. The disease was first discovered in this area in June 1933. Last fall and winter scouts located some 1,500 diseased trees scattered over approximately 1,400 square miles. An unexpectedly rapid development of the disease took place at the beginning of the growing season in 1934. Infected trees began to show serious wilting by May 20, and within a month many diseased trees were dead or dying. By the end of June, 3,255 such trees had been found in the States, as follows: New Jersey, 2,012; New York, 1,235; and Connecticut, 8; and up to July 31, 6,500 diseased trees were known to be infected. The above conditions are attributed to the growth of overwintering infections which developed rapidly in the new current season's sapwood.

### Bark Beetles Transfer Elm Disease

Work in Europe and preliminary studies in the United States indicated that certain bark beetles transfer the disease from tree to tree. Entomologists in the Department are studying the habits and distribution of these insects. There is no known cure for a diseased tree. The removal and burning of affected trees is the only practical

method of preventing the spread of the disease. This has been done as rapidly as possible with the State and Federal funds available. The unexpectedly large number of infected trees made it impossible, however, to do all the eradication necessary. Eradication of the disease appears to be practicable, but the scope of the work must be enlarged. Delay will increase the eventual cost. The disease was located at three other points—at Cleveland and Cincinnati, Ohio, in 1930, and at Baltimore, Md., in 1933. But at these points the European elm bark beetles apparently were not established. Eradication of the diseased trees appears to have been effective in these cases.

Spreading through Mexico, the Mexican fruit fly reached the northern border of that country some years ago and was first found in the lower Rio Grande Valley of Texas in 1927. It has persisted in that area in small numbers, despite efforts made by the State and Federal Governments and by the growers to eliminate it and to prevent reinfestation from Mexico. Suppression measures, consisting of the maintenance of a host-free period and the spraying of groves in which flies were found, have been continued.

### Japanese Beetle at St. Louis, Mo.

The most important extension of the range of the Japanese beetle discovered in recent years is an outbreak in St. Louis, Mo. The insect was first picked up there by Boy Scouts in 1932. Several additional beetles were found in 1933, but information concerning the matter did not reach the Department until the spring of 1934. The infested area was something over 1 square mile. This is the first infestation of this size occurring west of Pennsylvania, although a few beetles have been taken in traps at intervening points, usually along railway lines. Officials of the Missouri State Department of Agriculture and of the city of St. Louis are anxious to suppress this infestation, and have made available their somewhat limited resources and equipment for eradication work.

## CHEMISTRY AND SOIL INVESTIGATIONS

The protection of agricultural products and equipment against the destructive action of insects, micro-organisms, fire, and other agencies is one of the Department's major activities. Losses to American agriculture from these various causes are conservatively estimated to exceed \$2,000,000,000 annually.

Work upon rotenone has led to a vast increase in the use of this new insecticide. During the past year 500,000 pounds of derris root was imported for manufacture into rotenone-bearing dusts, extracts fly sprays, etc. The high toxicity of rotenone-containing products to such insects as the cabbage worm, and their harmlessness to man and animals, adapt them for use as insecticides upon vegetables. More than 300,000 pounds of derris dust was employed during the past season on cauliflower alone.

Domestic sources of rotenone, such as the common weed known as "Devil's shoestring" (*Cracca virginiana*), are being surveyed.

A harmless means has been discovered for preventing the objectionable darkening of sliced fruit and vegetables without the use of sulphur dioxide, the presence of which in excessive quantities has

caused the rejection by several foreign countries of certain American exported products. The commercial development of this new process is expected to be of great benefit to agriculture.

Farm fires in the United States in 1933 caused damage exceeding \$100,000,000 and resulted in the loss of approximately 3,500 lives. American agriculture can ill afford this heavy "fire tax", which for the entire United States amounts to an average of about \$16 per farm. This excessive drain is being alleviated through the Department's introduction of safety codes, by published instructions on the prevention and control of farm fires, and by an active educational campaign in cooperation with 4-H clubs and other organizations. By the adoption of the Department's recommendations, there has been a marked reduction in calamities of this description.

An additional hazard in the case of industries handling grain, flour, starch, sugar, cattle feeds, food products, insecticides, fertilizers, and other agricultural products is that of dust explosions. In the last 17 years (1917-33) there have been more than 360 dust explosions of this character in which 281 persons were killed, 624 injured, and an estimated \$31,530,850 worth of property destroyed. The Department, cooperating with insurance companies and other protective agencies, has greatly reduced the number and violence of these accidents, with a considerable saving in life and property.

The Department developed a process for making a fine quality of white starch from cull and surplus sweetpotatoes. This led to an authorization by the Federal Emergency Relief Administration of funds not to exceed \$150,000 for the construction and operation of a cooperative sweetpotato-starch plant at Laurel, Miss.

### Beverages from Cull and Surplus Fruit

Among other recent important developments may be mentioned the Department's improvement of methods of manufacturing potable juices, wines, cordials, and other beverages from cull and surplus fruits, a chemical study of the soybean in order to determine what varieties are best suited for oil and cattle-food production, and the application of the ethylene treatment for improving the quality of walnut meats (a new development which in the past year has increased the value of this crop to producers by over \$100,000).

For developing new methods for making useful products from straw, cornstalks, hulls, and other so-called "agricultural wastes", the Department is conducting investigations in cooperation with the Iowa State College. A new laboratory building which is being erected at Ames, Iowa, for this purpose with P. W. A. funds, will be equipped with the latest apparatus for producing illuminating gas, chemicals, and other byproducts from farm wastes by destructive distillation, fermentation, and other treatments. The utilization of these cellular wastes for paper, fiber board, and other promising commodities is being investigated. The problems are being studied from the viewpoint of the economic conditions in each agricultural section. Results of this work will help farmers to derive a profit from organic refuse which in many instances is now entirely wasted.

The Department recently discovered methods for fireproofing fabrics which will permit the employment of cotton cloth for awnings in many cities where this is not permitted by present fire-protective

regulations. Similarly its work on the development of improved vat dyes of greater fastness to light will extend the use of cotton goods. The Department's production of gluconic acid and other valuable organic chemicals by the mold fermentation of corn sugar is another illustration of how chemical research can widen the market for agricultural products.

### Results of Fertilizer Studies

Fertilizer work done by the Department for the past 20 years has helped to develop a nitrogen industry adequate to meet the country's requirements for peace-time industry and for national defense, to foster a domestic potash industry which guarantees the United States against future shortage and foreign monopoly, to improve the production of phosphate and mixed fertilizer, and to save the American farmer more than \$30,000,000 annually.

An idea of the extent to which the farmer has profited as a result of reduced costs of fertilizers may be gained from a comparison of the costs per unit of plant food in various materials shown in table 1.

TABLE 1.—Average spot prices per unit of 20 pounds of plant food in various materials at producing points, in stated years

| Material                        | Plant food           | 1920   | 1925   | 1930   | 1933   |
|---------------------------------|----------------------|--------|--------|--------|--------|
| Sodium nitrate.....             | Nitrogen.....        | \$4.44 | \$3.28 | \$2.49 | \$1.53 |
| Ammonium sulphate.....          | do.....              | 4.08   | 2.65   | 1.79   | 1.12   |
| Anhydrous ammonia.....          | do.....              |        | 1.75   | 1.40   | 1.15   |
| Cyanamid.....                   | do.....              | 3.40   | 2.20   | 1.65   | 1.13   |
| Animal tankage.....             | do.....              | 8.38   | 3.98   | 3.78   | 2.02   |
| Fish scrap.....                 | do.....              | 8.02   | 5.33   | 4.95   | 2.88   |
| Dried blood.....                | do.....              | 8.97   | 4.53   | 4.27   | 2.63   |
| Cottonseed meal.....            | do.....              | 9.48   | 5.69   | 5.01   | 2.71   |
| Run-of-pile superphosphate..... | Phosphoric acid..... | 1.22   | .57    | .54    | .43    |
| Potassium chloride.....         | Potash.....          | 2.41   | .68    | .69    | .70    |

That the American potash industry has become so firmly established as to free this country from foreign control was demonstrated by its initiation this year of a series of price reductions which brought the cost of muriate of potash to the lowest price at which it had ever been quoted in this country, namely, 35.2 cents per unit of potash.

The utilization of synthetic ammonia in its application to the fabrication of new nitrogenous fertilizers has been studied with a view to the elaboration of substitutes for the high-priced organic ingredients and to promote the use of nitric acid in fertilizer manufacture.

The blast-furnace smelting of natural phosphate rock as developed by this Department yields the element, phosphorus, freed from its combinations, as a convenient material for distribution and fabrication into a series of fertilizer compounds. The Department's equipment and personnel applied to this important research has been transferred to the Tennessee Valley Authority to constitute a part of that agency's fertilizer-production program. Collateral researches involving smaller expenditures continue in the Department.

The application of this new technology to the vast phosphate deposits of the Rocky Mountain States appears to be the most feasible method of placing those deposits at the service of the farmers of the



Midwestern and Western States. Utilization of these deposits would furnish much employment.

The Department continues to seek the elimination of the less valuable, with increased concentration of the more valuable, constituents of prepared fertilizers. Results to date, with a 40-percent increase in plant-food content, represent a proportionate decrease in distribution and handling charges amounting to an annual saving of several million dollars.

### The Soil Survey

During the past fiscal year the Soil Survey mapped approximately 24,000 square miles of rural lands in 26 States and Puerto Rico. This brought the total area covered to more than 1½ million square miles, or something over one-half of the nonmountainous land of the Nation. In addition the Soil Survey aided other Government agencies in dealing with problems of land use, reclamation, and farm credit. The maps of the Soil Survey furnish a basis for developing policies of land use. With the accompanying reports, these maps provide working handbooks which describe conditions of climate, vegetation, physiography, geology, and drainage, and indicate the possible uses and productivity of particular areas.

In recent years the Soil Survey Division has cooperated with the North Dakota Agricultural Experiment Station in surveying the western counties of North Dakota for a classification of rural lands for tax assessments. Other States, especially Washington, plan a similar land classification. Appraisers for the Federal land banks use the soil maps. In areas surveyed recently the land appraisers rely almost exclusively on the soil survey. Organizations responsible for the determination of land use, the zoning of rural lands, the appraisal of farm lands, the purchase of lands for farms or forests, and the location of reclamation projects depend on the Soil Survey maps and reports.

### Soil Erosion

It is imperative to emphasize the serious problem of soil erosion. Inattention to the progressive devastation of great areas by the uncontrolled action of wind and water already has cost the Nation many billions. In terms of our national life and welfare, the loss cannot be expressed in dollars and cents. The Department has made progress in both the research and the extension phases of erosion control at its erosion control experiment stations. The remarkable effectiveness of vegetation in holding the soil in place has been measured in numerous ways under a wide variety of conditions. Associated studies have dealt with the comparative influence of different crops, the effects of cultivation, the value and action of organic matter in the soil, the make-up and arrangement of crop rotations, etc. The same cultivated crop may provoke remarkably different degrees of erosion in different rotations, depending on definite factors in the character and sequence of the other crops.

New and promising possibilities are developing through the combination of the vegetation factor with terracing, contour cultivation, and other mechanical types of control, especially under conditions of land use and slope where either alone may prove inadequate. Most

promise under a rather wide range of conditions appears to lie in such combinations of methods.

Tests at the erosion experiment farms continue to demonstrate that terracing is the most effective single means of controlling soil erosion on cultivated land. It is particularly effective on land devoted to such crops as corn and cotton. Supplementing the terraces with contour plowing and the use of soil-saving and soil-building crops gives the best results. The experience of the Civilian Conservation Corps in gully control showed that for lands suitable only for pasture or forest, masonry or concrete structures are too costly. For such lands, less permanent dams of brush and logs or rock are practical.

## EXTENSION AND INFORMATION WORK

All phases of the Department's traditional job of diffusing useful information on subjects connected with agriculture took on new meaning and vitality during the year. Through extension activities, press and radio releases, and through official publications the Department forwarded the crop-adjustment programs, and kept farmers and others in touch with technical progress in agricultural economics, in plant and animal science, in disease and pest control, in home economics, and in many other subjects of practical importance. It dealt comprehensively with all phases of the drought problem, from the meteorological aspects to the economic and social effects immediate and prospective. It specially emphasized the importance of erosion control and soil building through the increased use of pasture and forage, a course which has the additional great advantage of harmonizing with the crop-adjustment programs. Research and technical progress do not conflict with the need to readjust production, as many farmers and others mistakenly suppose; and the Department took pains to make this clear through various informational channels.

With the passage of the Agricultural Adjustment Act, the Extension Service became the spearhead of the adjustment campaigns. State extension workers and county agricultural agents in most of the States devoted much of their time to the organization and training of county and community crop-adjustment committees, and to holding meetings of farmers to explain the need for production control and the provisions of the production-control contracts. They assisted farmers in executing contracts, supervised the measuring of fields to determine compliance, distributed checks for benefit and acreage-rental payments, and handled many other details involved in the contracts. Extension agents held nearly 75,000 meetings of farmers during the year in connection with production-control campaigns.

Extension workers everywhere assisted relief agencies, both in planning relief activities, and in suggesting to farm families means of increasing their incomes and keeping off relief rolls. Home-demonstration agents organized and directed home-gardening and food-preservation projects, supervised community-canning plants, and made suggestions regarding low-cost foods to maintain satisfactory dietary standards. Extension nutrition workers in a number of States served as advisers to State relief administrations on food problems.

The drought brought many new duties to extension workers. Local arrangements for the appraisal and purchase of several million

cattle and sheep in the drought area by the Agricultural Adjustment Administration were, for the most part, in the hands of extension agents. Extension directors generally served as State drought directors and county agricultural agents as county drought directors. State drought directors assigned purchase quotas of cattle and sheep to counties, and county agents, with the assistance of the county drought service committees, arranged for the listing of livestock for purchase. Extension agents advised farmers regarding the conservation of feed supplies, the planting and use of emergency forage crops, the planting of emergency gardens, and many other means of lessening the ravages of the drought.

### Boys and Girls 4-H Clubs

Both agricultural and home demonstration agents found time to continue in large measure one of the most important of extension activities, the 4-H boys' and girls' clubs. Enrollment in 4-H clubs and completion of projects by club members in 1933 reached practically the 1932 figures, and preliminary estimates for 1934 indicate that there has been little falling off in club work.

With the additional personnel employed as emergency agricultural agents and in other capacities through allotments of funds by the Agricultural Adjustment Administration, and with assistance given by the relief administration in some States in the employment of home demonstration agents, the extension staff now consists of a larger force of trained workers than at any previous time. On June 30, 1934, the total was 6,549, of whom 3,344 were agricultural agents and assistant agents in counties, and 1,387 were county home demonstration agents and assistants.

### FARM HOUSING

With funds provided by the Civil Works Administration, the Department conducted a farm-housing survey as part of the farm-recovery program. The inconvenience of farmhouses, the absence of comforts which are taken as a matter of course in the city, and the wide-spread lack of even simple facilities for safeguarding health are well known. Years of economic depression have intensified these conditions and lowered the standard of living among farm people. An improvement in rural housing would benefit the entire Nation. It would raise the rural living standard, furnish employment in many industries, and quicken trade in both town and country.

The survey covered farmhouses representative of conditions the country over. Its purpose was threefold: (1) To obtain definite facts and figures on rural-housing needs from the men and women occupants; (2) to work out plans and specifications for building new low-cost rural houses, and for making repairs and improvements on houses now standing; and (3) to suggest methods of financing that would aid in rural improvement and national economic recovery.

As an immediate relief measure the project gave employment to nearly 5,000 persons, among them about 4,500 women. The personnel included women trained in home economics, agricultural engineers and architects, and persons with statistical, clerical, and field

experience. Bureaus of the Department cooperated with State extension services in the survey.

The field staff visited more than 600,000 farm homes in 352 counties in 46 States and obtained information regarding water supply and sewage disposal, light and heat, refrigeration, laundry, and cooking facilities, and on new installations and construction and acceptable methods of financing. An engineer in each county obtained data on needed repairs, and worked up a schedule of unit costs after interviewing local dealers, contractors, and farmers.

The survey indicated that probably 50 percent of our rural homes are in good structural condition. They may be poorly arranged, and may lack modern conveniences, but at least the houses are reasonably sound. On the other hand, some 15 percent of the houses need new foundations; between 15 and 20 percent need new roofs; 10 to 15 percent need new floors; and about 10 percent need extensive repairs or replacement of exterior walls. Between the extremes of houses in good condition and those needing complete replacement of some part or all of the house is a large group needing extensive repairs of some kind, including refinishing inside and painting outside.

### Prospects for Farm Building

The survey indicated that 250,000 farmers hope to build new houses within the next 3 years, and that a much larger number wish to remodel their houses and add modern conveniences when their incomes permit. To assist farm people in planning improvements the Bureaus of Agricultural Engineering and Home Economics cooperated with 20 of the State agricultural colleges and the Civil Works Administration in preparing designs for well-arranged low-cost farmhouses. Forty of these plans have been published in a farmers' bulletin entitled "Farmhouse Plans." Working drawings to be used by carpenters in building these houses were made available through the extension services of the State agricultural colleges.

Studies were made of kitchen arrangement, storage units, and farmhouse remodeling. Suggestions are being prepared for remodeling old houses and making repairs. Specifications were prepared for plumbing and heating equipment suitable for farm use. The survey stimulated a renewed interest in home improvement. There is an increasing demand for material on all phases of the subject. The survey showed that a large number of farm people want electric service. Accordingly, investigators studied present electric-service facilities, desirable extensions of transmission lines, and uses for electricity on farms. Other phases of the survey provided information on rural hospital and library facilities. In short, it furnished much basic information needed in planning for improved living conditions on farms.

### Lack of Conveniences on the Farm

The survey revealed an extreme lack of home comforts and conveniences on the farm. Some of the causes were obvious. Rural communities find it difficult to cooperate in supplying utilities such as water supply and sewage disposal. Rural electrification is costly. Moreover, farm people frequently do things in laborious ways after

easier methods have been discovered. In far too many instances the farmhouse provides only meager facilities for sheltering and feeding the farm family. It contributes little toward making homelife pleasant. Heretofore farm savings have largely gone back into the farm to increase production. It would be sound economy to put an increased proportion into the home. Such a course, besides raising the farm standard of living, would harmonize with the need for controlling production.

## WEATHER STUDIES

During the past year the Weather Bureau took steps to utilize the results of recent studies and investigations in forecasting. This action was prompted, in part, by recommendations contained in a report by a committee of the Science Advisory Board. The committee was created by Executive order on July 31, 1933, for the purpose of cooperating with the Federal Government in the handling of problems in which science is involved. A special committee on the Weather Bureau consisted of Robert A. Millikan, director, Normal Bridge Laboratory of Physics and chairman of the executive council, California Institute of Technology, Pasadena, Calif., chairman; Isaiah Bowman, chairman National Research Council, director, American Geographical Society, New York City; Karl T. Compton, president Massachusetts Institute of Technology, Cambridge, Mass.; and Charles D. Reed, senior meteorologist in charge, Weather Bureau section center, Des Moines, Iowa. The committee's report was published in December 1933, was approved in January 1934, and action to carry out its recommendations has been proceeding since that time.

The most important recommendation related to the development of forecasting on the basis of what is known as "air-mass analysis." Briefly stated, air-mass analysis consists of a detailed study of masses of air of decidedly different structure as to temperature, moisture, and wind that meet along an irregular line variously referred to as a "discontinuity line", "polar front", "wind shift", etc. These masses of air, cold and dry from polar regions, warm and humid from equatorial, do not readily mix but tend to preserve their individual identities, the warm, moist air being forced to rise above and flow over the denser cold air, with resulting condensation and precipitation and other attendant phenomena which give us most of the stormy weather characteristic of temperate latitudes.

The chief requisites for the application of air-mass analysis to forecasting are (1) personnel qualified by training and experience in this school of thought; (2) daily reports of temperature, humidity, and other conditions up to 3 or 4 miles above the earth's surface at a large number of places well distributed over the country; and (3) more frequent and more detailed reports of surface conditions, including observations at sea.

In carrying out the first objective a special nonassembled civil-service examination has been announced for the purpose of bringing into the Bureau several well-qualified men who have specialized in forecasting based on air-mass analysis. The introduction of this method will require probably from 3 to 5 years, during which period

the personnel of the Bureau, already experienced in forecasting, will be given additional training along the newer lines.

The second part of the program, namely, securing upper-air observations of temperature, humidity, etc., has been put into effect to the extent that this is possible at the present time. This has been accomplished through cooperation with the War and Navy Departments. In all, 20 airplane stations are now in operation, 7 each by those two Departments and 6 by the Weather Bureau. These are quite well distributed over the country. Daily flights are made to heights of about 17,000 feet and the data are at once transmitted by the teletype system of the Bureau of Air Commerce. The organization of this net work of upper-air stations constitutes the most important step in the development of the air-mass analysis program. The data will be of great value in theoretical studies as well as in the more practical work of forecasting.

Under existing conditions not much can be done in putting into effect the third objective, namely, securing more frequent and more detailed observations of surface conditions, both on the land and at sea. However, a definite program has been worked out for adoption as soon as practicable. It provides for 4 daily weather maps instead of 2 and for more precise information regarding cloud types, character of precipitation, pressure changes, and other elements. The data will be reported in accordance with a system of codes and units that has been adopted for international use, thus assuring comparable reports from all countries.

### Problems of Forecasting

Generally speaking, there has been comparatively little progress in forecasting for many years. It is confidently believed that, through the greater employment of modern working tools such as radio and the airplane, which will give us essential data in the vertical as well as in the horizontal, we now stand on the threshold of an era of real progress, which will provide forecasts more accurate, more specific, and covering somewhat greater periods in advance than have been possible up to the present time.

With funds allotted for the purpose by the Civil Works Administration this Department studied the frequencies at which excessive rainfall for short periods has occurred in different parts of the country. Results of this study should have numerous important practical applications. They have a bearing on the planning of terracing systems, on farm-drainage systems carrying surface water, on the construction of culvert-waterway openings for small watersheds, and on the need for municipal storm-water sewers and other structures for carrying run-off water. Knowledge of the frequencies with which different rates of precipitation recur will enable engineers to determine the maximum rates against which run-off structures should give protection. The study assembled data relating to excessive precipitations at 208 Weather Bureau stations. The investigators derived formulas to represent the maximum rates of precipitation for periods up to 400 minutes. They prepared charts showing the frequency, the duration, and the season of various precipitations. It should now be possible to predict with reasonable accuracy the probable frequency of short-duration precipita-

tions of any given intensity in any part of the United States. Storms along the Gulf of Mexico and the Atlantic seaboard are of much greater intensity than storms inland east of the one hundredth meridian. West of that meridian storms are of less intensity and frequency than farther east.

## ROAD CONSTRUCTION

To provide for emergency construction of public highways and related projects, the National Industrial Recovery Act authorized the President to make grants to the several State highway departments in an amount not less than \$400,000,000 to be expended on sections of the Federal-aid highway system, extensions of the Federal-aid system into and through municipalities, and secondary or feeder roads to be agreed upon by the State highway departments and the Secretary of Agriculture. An additional amount not less than \$50,000,000 was authorized for the construction of roads in the national forests and parks, in Indian reservations, and through public lands.

Under the latter authorization, \$25,000,000 was allotted to this Department for the construction of roads in the national forests, and \$5,000,000 was made available and apportioned among States having more than 5 percent of their area in public lands for construction of roads through such lands under the joint supervision of the Department and the several State highway departments. For the expenditure of these sums and the \$400,000,000 allotted for construction on the Federal-aid system and secondary roads, the Department has been directly responsible. Under special agreements the Bureau of Public Roads has also supervised the design and construction of roads in the national parks and loan-and-grant projects approved by the Public Works Administration.

Increase of employment was the primary purpose of these allotments, and the results in that respect have been satisfactory. Measured in man-months, the employment afforded by road construction work, under the supervision of the Department, in the fiscal year 1934, was almost as great as the total for the 2 preceding years.

As shown by table 2, employment provided during the past year totaled 2,185,259 man-months, which may be compared with 908,271 man-months in the fiscal year 1932 and 1,352,626 in 1933. The 1934 employment varied from a minimum of 111,307 men in August 1933 to a maximum of 344,421 in June 1934, with an average monthly employment of 182,105 men.

TABLE 2.—*Comparison of employment during fiscal years 1932, 1933, and 1934 on all Federal and Federal-aid highway and forest road and trail construction, and on all Federal and State road work, including State maintenance operations, by months*

| Month          | Men employed on all Federal, Federal-aid highway, and forest road and trail construction |                   |                   | Total men employed on all Federal and State highway and forest road and trail construction and maintenance |                   |                   |
|----------------|--|-------------------|-------------------|--|-------------------|-------------------|
|                | 1932   | 1933              | 1934              | 1932   | 1933              | 1934              |
|                | <i>Man-months</i>  | <i>Man-months</i> | <i>Man-months</i> | <i>Man-months</i>  | <i>Man-months</i> | <i>Man-months</i> |
| July.....      | 170,644  | 83,795            | 129,205           | 391,285  | 308,125           | 332,277           |
| August.....    | 156,874  | 92,426            | 111,307           | 395,405  | 336,483           | 329,909           |
| September..... | 120,289  | 126,346           | 118,555           | 360,806  | 378,558           | 341,481           |
| October.....   | 92,039   | 128,324           | 160,190           | 333,274  | 377,464           | 390,203           |
| November.....  | 84,693   | 134,360           | 193,613           | 291,543  | 376,094           | 427,822           |
| December.....  | 37,293   | 101,284           | 182,004           | 246,273  | 293,478           | 369,677           |
| January.....   | 30,583   | 78,153            | 159,304           | 230,254  | 269,098           | 321,139           |
| February.....  | 27,637   | 80,881            | 162,332           | 219,182  | 257,922           | 311,608           |
| March.....     | 29,017   | 98,884            | 149,474           | 212,553  | 282,093           | 301,686           |
| April.....     | 43,728   | 126,419           | 194,554           | 247,366  | 304,045           | 352,175           |
| May.....       | 61,114   | 144,591           | 280,300           | 261,721  | 334,898           | 474,832           |
| June.....      | 74,360   | 157,463           | 344,421           | 283,224  | 364,792           | 553,020           |
| Total.....     | 908,271  | 1,352,626         | 2,185,259         | 3,472,891  | 3,883,050         | 4,505,829         |

These figures represent continuous employment—not individuals employed. By reason of the limitation of hours per week the number of individuals benefited is greater than the above figures indicate, the monthly average being about 261,000 persons. The figures represent direct employment only. The manufacture and transportation of materials and equipment employed an additional large number of men, estimated at 1.4 times the direct employment, or, for the year, approximately 3,059,300 man-months, making the total estimated employment, direct and indirect, during the year approximately 5,245,000 man-months.

The table gives details of the direct continuous employment by months in the fiscal years 1932, 1933, and 1934, on all Federal and Federal-aid road work supervised by the Department in comparison with the corresponding employment afforded by all Federal and State road construction and maintenance work. It will be noted that the employment provided by the Federal road work increased from approximately one-fourth of the total State and Federal employment in 1932 to nearly one-half of the total in the fiscal year 1934.

#### Distribution of Road-Building Employment

To distribute the road-building employment as widely as practicable the rules and regulations, issued by the Department with the approval of the Special Board for Public Works, required that projects be located in at least 75 percent of all counties in each State. In the course of the year projects were actually initiated in 2,649 of the 3,074 counties of the United States, or 86 percent. In harmony with the requirements for other Public Works projects, the regulations also limited the working time of each individual to 30 hours per week, subject to exceptions consistent with the nature of the work; provided for the establishment of minimum wage rates by the several State highway departments, and stipulated certain



reasonable preferences to apply in the employment of labor secured through local employment agencies designated by the United States Employment Service. Provision was also made to give effect to the purpose of the act to use a maximum of human labor in lieu of machinery wherever practicable and consistent with sound economy and public advantage.

In addition to funds provided by the National Industrial Recovery Act there were available for road building at the beginning of the fiscal year unexpended balances of previous appropriations for Federal-aid and emergency road construction and for forest and public-lands highways, for which this Department is directly responsible, in the amount of \$133,271,408. With the \$424,000,000 made available by the National Industrial Recovery Act for construction of Federal-aid, national-forest, public-lands, and secondary highways, the total available for expenditure at the beginning of the year was \$557,271,408.

### Expenditures for Road Construction

Expenditures on the various classes of work for which the above sums were available amounted during the year to approximately \$243,821,700, including \$42,291,900 of Federal-aid funds, \$55,669,100 of emergency construction funds appropriated by the act of July 21, 1932, \$123,754,300 of public-works funds appropriated by section 204 of the National Industrial Recovery Act, \$12,744,300 of several funds available for forest-highway construction, \$7,064,600 for forest truck trails and trails, and \$2,297,500 from funds available for the construction of roads through public lands. The expenditure reported does not include \$35,275,000 disbursed to State highway departments in advance payment for work authorized by section 204 of the National Industrial Recovery Act, or expenditures made by States for work completed on public-works projects, probably exceeding \$100,000,000, for which reimbursement had not been made by the Federal Government on June 30. Nor do the reported expenditures include any sums paid for work done on national-park highways under the engineering supervision of the Bureau of Public Roads or for loan-and-grant highway projects approved by the Public Works Administration and also placed under the supervision of the Bureau of Public Roads.

Construction work on projects of various classes, covering 23,150 miles of road, 12,080 miles of truck tracks, and 2,525 miles of trails, was completed during the fiscal year; including 14,780 miles improved with Federal-aid and emergency-construction funds, 6,986 miles built with funds appropriated by section 204 of the National Industrial Recovery Act, 1,099 miles of forest highways, 12,080 miles of truck trails, and 2,525 miles of trails, and 285 miles of public-lands highways. The total cost of the completed projects was \$340,963,082, exclusive of the emergency conservation funds.

At the close of the year the current program involved improvement of an additional 18,298 miles in all classes of projects, including 2,324 miles to be paid for with regular Federal-aid, State, and emergency-construction funds, 15,392 miles financed with section 204 funds, 1,646 miles of forest-highway projects, and 579 miles of public-lands highways, 1,700 miles of truck trails, and 1,300 miles of

trails. The estimated cost of these projects is \$510,384,274. The above does not include contemplated work of the C. C. C.

These mileages and costs of projects completed and in progress do not include national-park road projects or loan-and-grant projects approved by the Public Works Administration on which the construction work is supervised by the Bureau of Public Roads. Nor do they include work-relief projects in progress, involving nearly 7,800 miles of road on which labor is supplied and paid by the Federal Emergency Relief Administration and other costs paid with Public Works funds.

### CHANGES IN DEPARTMENT'S ORGANIZATION

Some important changes were made during the year in the organization of the Department. The position of Under Secretary of Agriculture was created. The position of Director of Scientific Work was discontinued. An Office of Budget and Finance was created, with a director in charge. The Bureau of Entomology and the Plant Quarantine and Control Administration were merged into a Bureau of Entomology and Plant Quarantine. To this were transferred several units in the Bureau of Plant Industry which deal with the control and prevention of the spread of plant diseases. Charles L. Marlatt, Chief of the Bureau of Entomology, retired after 44 years of service; William A. Taylor, Chief of the Bureau of Plant Industry, after 42 years of service; Beverly T. Galloway, principal pathologist and formerly Chief of the Bureau of Plant Industry, after 46 years of service; and James A. Evans, associate chief, Office of Cooperative Extension Work, after 29 years of service.

HENRY A. WALLACE,  
*Secretary of Agriculture.*





## WHAT'S NEW IN AGRICULTURE

**A**DJUSTMENT Program for Longer Future Requires Careful Land Planning With the launching of the New Deal in 1933, a many-sided program was set in motion by the Administration. Some parts of the program dealt with the immediate emergency, while others looked to the longer future. The interrelationships between the various parts, however, have not always been clearly understood. Probably no other phase of the program has given rise to more confusion than that of land use.

Should farmers with fertile crop land continue to keep a portion of it out of production, or should the adjustment be made by the elimination of production on the submarginal land? Should we not concentrate on increasing foreign outlets for our agricultural products instead of adjusting production at home? What place should there be for subsistence homesteads on the land? These are some of the questions in the minds of thoughtful persons.

The major consideration in the problem of land use is the necessity of maintaining a balance between the productive capacity of our land and the market outlets, under conditions of farming which will conserve rather than deplete our land resources. In approaching this problem, the first thing to determine is how many acres we need to farm. That means we must take into consideration the amount of farm products we are selling and expect to sell abroad, the amount we import, and the amount which will be consumed domestically. To arrive at definite figures is not easy, because we are dealing with a number of variables. Take the matter of exports, for example. The Government, under the Reciprocal Tariff Act passed by Congress, is now attempting to revive a two-way foreign trade that will make it possible for us to sell a greater amount of farm products abroad. But since the progress that can be made in this direction depends in part on conditions in the rest of the world, no one can say just how much we can expand our foreign markets for farm products, nor how soon.

When we examine consumption at home, we find that in the pre-depression period from 1925 to 1929, the amount of land used to pro-

duce food for the population of the United States, computed in terms of the present population of 125 million people, was 287 million acres. In 1932-33, however, the depression had reduced the standard of living so that the number of acres used for domestic food consumption was only 281 million. In that period, nonfood crops consumed at home accounted for 30 million acres, and 44 million acres were used producing crops for export. This made a total of 354 million acres in use for food and nonfood crops.

### Land Requirements for Different Diets

As we have explored the possibilities of keeping a maximum of farm land in use through increased consumer incomes and an improved standard of living, we have worked out estimates of the land required to supply the products called for by four scientifically balanced diets at different levels of nutritive content and cost. Now the number of acres needed to sustain our population on the basis of the first or cheapest diet is far less than on the basis of the fourth one. The subsistence level of the first diet requires only 180 million productive acres, while the second diet calls for 226 million, the third 280 million, and the fourth, or liberal diet, would take 335 million acres.

Our present level of domestic consumption calls for an acreage which approximates that required by the third diet, described as adequate, at moderate cost. The fact that the more liberal diet would require the utilization of some 55 million acres of producing farm land above our present requirements indicates to what extent greater domestic purchasing power and changed dietary habits could solve our agricultural-adjustment problem. However, the present outlook for achieving the level of the fourth diet is none too rosy. The problem of stepping up consumer purchasing power from the present level is itself a tremendous one.

### Several Permanent Solutions Possible

The important thing to remember is that there are several possible solutions of a permanent nature, any or all of which may be applied to our problem of restoring a balance in agriculture. One is to shrink the size of the plant, a second is to increase our foreign outlets, and a third is to raise the domestic standard of living so that more acres will be used to feed our people at home. Still another is to continue the shift, already begun, from an intensive to an extensive type of farming.

The Administration is attacking the problem from all these directions at once. The Agricultural Adjustment Administration is collaborating with the Federal Emergency Relief Administration and the Department of Interior in the type of approach which involves the purchase of submarginal land and its removal from cultivation. The acquisition of this land naturally proceeds very slowly, but there is no reason why material progress cannot be made over a period of 5 or 10 years. There are worth-while social as well as practical reasons for this approach to the problem. To help farmers make a start on better soil is a justifiable objective. Also, compact resettlement around established communities should reduce the exorbitant costs to local and State governments for maintaining roads, schools, and other public services for scattered agricultural settlements. Finally, much of

the land not suited for agriculture has great value to society for recreational and other uses, including wildlife conservation.

Meanwhile, if foreign trade revives, through such measures as the Reciprocal Tariff Act, and if other measures and events increase domestic purchasing power, there is a good chance that expansion of acreage to supply increased demands may eventually meet the shrinkage in total plant brought about by the land-acquisition program. Progress in each of these three directions is not likely to be spectacular, and yet in time it may be sufficient to correct the maladjustment under which agriculture has been laboring in recent years.

Not all the land taken out of production will have to be acquired by the Federal Government outright. Undoubtedly much can be accomplished in cooperation with the States. Farm lands which return to State ownership as a result of nonpayment of taxes may be kept out of production. Many States, too, may find that the method of rural zoning, as practiced for example by Wisconsin, may prove useful in discouraging settlement on uneconomic or isolated lands, particularly when surrounded by forest and recreational areas. A third indirect method of influencing land use is the purchase of easements. This may be helpful as one means of making it worth while for farmers to check serious soil erosion, or of directing land settlement away from areas unsuitable for agriculture.

### Relocating Farm Families

The program of land acquisition inevitably raises the question: What is to become of the thousands of farm families now living on the land to be acquired? The people affected fall into several main categories. (1) There are those who will be able to find work where they are, in the forest reserves, game preserves, parks, and so on which are set up by the Federal or State governments. (2) There are the families who will take care of themselves, either moving to town or to another piece of land. Often the people have a little nest egg saved up, which together with the modest sum paid them for their land, will enable them to make a fresh start somewhere else. (3) There are those who will need help or rehabilitation. (4) There are the people who would be willing to sell, provided that they can continue to live on their land the rest of their lives. In many cases it may be consistent with the objectives of this program to purchase the land subject to this privilege.

When we consider the problem of rehabilitating rural families, we find that there are other groups who desire some means of self-help on the land. There are stranded industrial families in the cities and in areas where the exhaustion of natural resources, such as coal or timber, has eliminated the prospect of employment. There are also the farm-bred people who would normally have gone to the cities, but who are now, because of reduced industrial activity, forced to remain in the country.

The establishment of "rural-industrial communities" has been proposed as a constructive remedy for the conditions just described. The Federal Emergency Relief Administration is cooperating with the States in setting up such communities, which are intended to provide home sites and tracts of land for stranded families, where products may be raised for home use. Likewise it is intended to make part-time occupations, such as the production of handicraft goods, available for the earning of supplementary income. Eventually it is hoped that a

decentralization of industry may bring permanent employment to such communities.

### Crop Adjustments Well Along

The program of land use and the related one of community building necessarily look to the longer future. Progress made in these directions, along with general recovery and revival of foreign trade, will lessen the need for severely restrictive adjustment of production on good land. Already the emergency phase of adjustment is passing into the long-time phase. Instead of making drastic reduction in crop acreage, as was necessary in 1933, farmers now need merely so to shape their plans that cultivated acreage will not increase too much. We are witnessing a shift in the usage of fertile land from an intensive to an extensive type of farming, with increased acreages of pasture, forage, soil-improvement crops, game refuges, and wood lots. This change is desirable not only to gain the proper economic balance, but as a means of better livestock feeding and of conserving soil fertility. Such a shift is itself a significant move in the direction of better use of our land resources.

H. R. TOLLEY, *Agricultural Adjustment Administration*.

**A**GRICULTURE Should Study Possible Alternatives to Processing-Tax System

The agricultural-adjustment program for the major export products has been made possible largely through funds derived from processing taxes. As a result of the excessive world supplies, the farm prices of wheat, corn, hogs, cotton, and tobacco were far below their normal relation to other prices at the time the Agricultural Adjustment Act was passed. The large American supply available for export prevented tariffs, where present, from maintaining the domestic price. The processing tax closed up part or all the gap between world market prices and the normal parity with commodities that farmers buy. Domestic consumers thus paid a normal price for their products, in part through the market price and the remaining part through tax payments. These tax payments covered disbursements of benefit payments to farmers who cooperated in production control, and thus made it possible to carry through the program of adjusting production. Obviously, as supplies are better adjusted to demand, and as demand itself improves, the market price of the basic commodities will tend to rise toward the parity level. Under the Agricultural Adjustment Act the Secretary might find it necessary to adjust the taxes downward from time to time as prices rise toward parity. If prices exceed parity, and remain above parity for a sufficient length of time, the fact might justify the complete removal of the tax. Under these conditions, what device should be substituted if agricultural adjustment is to be continued? The act itself, in the statement of objective, says the purpose is: "To establish and maintain such balance between production and consumption of agricultural products" (as will give farmers parity prices). This indicates that it is intended not only to restore, but to maintain balanced market conditions.

The processing tax may tend to prevent prices of some commodities from reaching parity. The amount spent by the consumer for hogs, including the processing tax, appears to be determined by the supply

and demand conditions. If supply is adjusted to such a point that the consumer will just pay a parity price for it, the continuation of a heavy tax would divert part of that amount for benefit payments, and leave the market price at a lower level. Under such circumstances, a processing tax would penalize noncooperators who attempted to increase production, and would insure to cooperating farmers the full parity income. Continued corn and hog adjustment would thus be made possible.

In the case of some other products, such as wheat or cotton, the tax appears to be largely added to the amount paid by consumers. After a normal balance between supply and demand had been restored, the tax would therefore not tend to depress the price received among non-cooperating farmers, but would tend to raise costs to consumers above parity levels which would be contrary to the declared purpose of the act.

### Various Alternatives Mentioned

The problem must be faced of developing methods of continuing production adjustment even after processing taxes on some products have to be eliminated in whole or in part. A number of possible alternatives have been suggested. Seven have been enumerated by the Secretary of Agriculture. The first two involve continuing to secure farmers' cooperation in production adjustment by making benefit payments to them, but raising the necessary money either (1) by means of a general sales tax or (2) by means of higher income taxes. Another plan, (3) is compulsory production control, through the taxation of farmers who produce in excess of their allotted quotas, along the general lines of the Bankhead Cotton Act and the Kerr-Smith Tobacco Act. Other proposals are: (4) Use a combination of stabilization purchases and loans to farmers on commodities in years of large crops and low prices. (5) Drop production control, but limit the quantity marketed for domestic use at higher prices, while permitting unlimited marketing for export at the world market price. (6) Eliminate production control by restoring foreign buying power by loans abroad of approximately half a billion dollars a year. (7) Eliminate production control and restore foreign buying power by reducing tariffs sufficiently to create a net excess of imports of at least one-half billion dollars a year.

### Difficulties in General Taxation

The first two methods involve general taxation for agricultural adjustment. It seems doubtful whether the general public would be willing to continue permanently a system of benefit payments to farmers for adjusting production in their own interests at the expense of the general taxpayer, even though that adjustment contributed to general economic stability. Several of the other proposals have even more obvious difficulties. The fifth plan, the two-price system with marketing control, besides involving serious administrative difficulties, would encourage the expansion of production, and force exports into world markets not prepared to take them.

The sixth proposal, to lend foreign purchasers each year the money to take continued heavy imports, though it was the method followed for years prior to 1929, is not sound. It could be only a temporary palliative, and would mean giving away most of the exports.



These eliminations brings us back to plans 3, 4, and 7. Plan 4 is somewhat along the line of the "ever-normal granary." Without accompanying control of production, however, purchases of supplies in large crop years cannot correct the surplus problem, as the Farm Board learned. Storage programs are desirable along with production adjustment, but they do not provide a satisfactory substitute. The Secretary's annual report, pages 1 to 109 of this volume, and the chapter on Smoothing Out the Cycles, in the book, *New Frontiers*, by Secretary Wallace, discuss the economics of the "ever-normal granary."

### The Compulsory Control of Production

This leaves compulsory control of production as under the Bankhead Act, or adequate expansion of foreign buying power, as the two remaining possibilities. To a certain extent both plans might have to be followed in the future. We are now experimenting, through the trade-agreement program, to see how far our imports can be increased through concessions to other countries. If we continue along this line long enough, it may expand exports sufficiently to ease the problem of surplus acreage.

Compulsory control is not an attractive method for continuously adjusting production. Farmers may become restive under direct control as the economic conditions which were responsible for it gradually fade from memory. Some alternative voluntary method might grow out of the present county control associations. It must be remembered, though, that similar attempts at voluntary production control in the past have always broken down, owing to the tendency of outsiders to increase production and get an undue share of the benefits while making none of the sacrifices. However, the overwhelming vote given by southern farmers for a continuation of the Bankhead plan suggests that farmers as a whole may continue willing to put up with the difficulties of compulsory controls, for the assurance they give of continued balanced production.

### Role of Government Land Buying

Another way in which adjustment might be continued is through the direct acquisition of land, or through arrangements for control of its use between the Federal Government and the individual farmers. The program for withdrawing submarginal land, in which more than 5 million acres may be purchased by Federal agencies during the current year, is one step in this direction. It would be exceedingly difficult, however, to take care of the whole surplus problem through the purchase of submarginal land alone. Such a small proportion of the poorer farms is devoted to commercial crops, and farmers on such land produce so little above their own subsistence requirements, that it might be necessary to purchase 100 to 150 million acres in order to retire 30 to 40 million acres from the major commercial crops. Moreover, the withdrawal of land from farming involves a serious problem in finding other occupations for the men who now farm the land. In the small amount of submarginal land purchased so far, the problem of the transfer and rehabilitation of the population has been more difficult than the problem of buying the land. On the tremendous scale suggested above, this would involve almost insuperable difficulties for any short-time program. Withdrawal of submarginal

land from production and rehabilitation of the people now on that land in more productive work, where they can maintain a higher standard of living, is very important from the standpoint of the common welfare, but it can make only a small contribution to the whole program of maintaining a proper balance between farm production and the demand.

### Direct Control of Land

Another possible way in which agricultural adjustment might be continued would be through direct control of land. One possible avenue would involve modification of our whole system of land laws, so as to establish the right of public agencies to restrict or limit in the common interest the use which an individual makes of his land. This right has already been recognized in the city zoning ordinances which restrict the size and type of buildings to be erected on various plots. Through State legislation zoning restrictions for agricultural land might restrict the proportion put in cultivated crops, or the utilization of land for various types of crops. This, however, could be only a slow development and would represent a very material change in our present ideas of what farm-land ownership means.

One other possibility lies in the expansion of domestic consuming power to use the full productive power of American farmers. We do not now have enough farm products to give every person in this country the liberal diet consumed by those with comfortable incomes. At the same time three-fourths of the families in this country do not have incomes high enough to enable them to pay for the time and energy necessary to produce, manufacture, and distribute such a diet for all our people. It would take many years to increase sufficiently the incomes of those who previously have not had a satisfactory standard of living. Increased domestic buying power would offer the possibility of ultimate demand for much more agricultural products than it has ever taken in the past, and farmers, given that expanded domestic purchasing power, could expand their production to take care of that more adequate consumption. But for many years it will be necessary to hold farm production in balance with the current rather than with the ideal levels of consumption. Farmers may look hopefully forward, however, to a time when demand can utilize the full productive power of American agriculture.

### Payment For Permanent Control

Another possibility would involve the purchase of control over land by the State or Federal Government on a permanent or semi-permanent basis, instead of on the 1-year basis provided by present benefit contracts. Instead of paying farmers a given sum of money to adjust their production in any 1 year, they could be paid for permanent control over part of their acreage. This might be done by leaving the land as the property of the individual farmers, but with the Federal Government authorized to restrict its use to forest pasture, hay, or other products as seemed wise in any particular period, the provision being made that only the owner of the farm should have the right so to use the land.

As compared with withdrawal of submarginal land, this would involve holding out of production over long periods part of the land on each farm. As a permanent program, it would be rather unde-

sirable to reduce the size of each of the present operating farms, instead of concentrating in a large area all the land withheld from production. As an intermediate program pending full restoration of domestic and foreign demand, however, and holding the land in reserve for eventual restoration of agricultural production, this program might offer advantages.

### Impractical to Drop Adjustment Efforts

One possible course would be not to attempt to continue the adjustment of production after farm prices reach parity and to permit the production and acreage of farm products again to be controlled solely by the farmers' response to prices. The evidence of previous years indicates that if this were done, farmers would soon lose much that they have won under the A. A. A. There would probably be a restoration of the cycles of over and under production in hogs, beef cattle, cotton, potatoes, etc. Farmers would face also the danger of excessive production as a whole, with a generally lower level of farm prices. The Agricultural Adjustment Act recognized these possibilities and directed that effort be made to maintain as well as to establish a good balance between production and consumption. The alternative of abandoning efforts at control, therefore, seems one which may be definitely ruled out, both from the point of view of the economic welfare of the farmers and the country as a whole.

No matter what continuing program is used, it will have to provide one element which the A. A. A. programs so far have largely failed to provide. That is greater flexibility in the operations of individual farms. As an emergency attack, it has been necessary to make the adjustment of production upward or downward in blanket form, usually by the same percentage for all farms. Such a rigid program obviously could not prove satisfactory over a long period. Young men acquire farms; young farmers develop into mature farmers capable of handling larger units; mature farmers become older and then do not wish to undertake such extensive operations; older farmers retire and work their farms on a very moderate basis or gradually quit farming. Changes in the organization of the farm and the area in crops will inevitably come with these changes in age. The availability of help from the sons as the family grows up also will influence the size of the farm and the intensity with which it is operated.

### Geographic Shifts in Agriculture

Besides these changes in the individual family situation, and many others which it is needless to indicate at length here, there are broad geographic shifts in agriculture with the passing of the years. Cities grow and require an increased production of milk, fresh fruits, and vegetables, etc. New methods of transportation are developed which result in shifts in areas where it is profitable to grow certain crops. New markets develop and demand new products. The price relations change between value of product and cost of transportation, shifting in or out the points where it is best to raise livestock or sell these crops. New varieties of crops or improved strains of livestock are developing, which may greatly change the possibilities of economic production. These and many other changes will need to continue. The adjustment of agricultural production under the A. A. A. has left

very little leeway for these economic and social changes. If the program is to be continued, it is essential that it operate so as not to "freeze" agriculture in its present form but instead to leave it sufficient flexibility to change and shift with changing individual needs and economic conditions. At the present time little can be said about the solution of this problem. It remains a problem to which increasing attention must be given if the adjustment of agricultural production is not eventually to prove a cramping rather than a helpful force in American agriculture.

### Early Consideration of the Problem Necessary

It may be several years yet before American farmers have to turn from the emergency processing tax support of the adjustment program to another program of production adjustment. The possibilities suggested above and other mechanisms which may be developed will all have to be canvassed carefully, if farmers are to continue to have balanced production.

The adjustment program has been under way for a year and a half. The processing-tax-and-benefit-payment plan, which has served for the emergency reduction of production, seems unlikely to be adequate permanently. At the present time no definite answer can be made as to what modification will prove the best alternative. Control of land use, partly through submarginal-land withdrawal, and possibly partly through permanent control of portions of existing farms or through zoning regulations, may offer a partial solution. Compulsory control of individual operations may be found satisfactory for permanent application in certain areas or for certain products. Expanding foreign and domestic markets may make continued adjustment less difficult but not less necessary. New methods not yet foreseen may need to be evolved.

The problem is one which must be studied carefully by all thoughtful farmers and all other persons interested in continuation of a prosperous agriculture and a well-balanced functioning economy.

MORDECAI EZEKIEL, *Economic Adviser to the Secretary.*

**ALFALFA Wilt Control by Breeding Making Remarkable Progress** One of the serious problems in alfalfa production is that of bacterial wilt. This disease threatens the crop especially in the Central and Western States, where alfalfa growing is most concentrated.

The causal organism has been isolated, but various cultural methods have not been successful in controlling the disease. It has been found, however, that some plants, especially those of Turkistan origin, are more or less resistant to bacterial wilt, and this fact forms the basis of the present breeding program designed to produce an alfalfa at once highly resistant to the disease and to cold and combining the desirable characters of yield and other qualities now found in certain varieties highly susceptible to bacterial wilt.

This work, carried on by the Bureau of Plant Industry in cooperation with State experiment stations, including those of California, Kansas, Nebraska, and Wisconsin, has been in progress about 6 years, and tangible results are now appearing. Plants of alfalfa have been

selected from outstanding old fields and from many introductions from Turkistan, Persia, Spain, Africa, and other foreign countries, collected by representatives of the United States Department of Agriculture. Many of these strains have been self-fertilized (the same plant being both male and female parent serves to intensify and purify the resistance to wilt) for five generations, each generation being subjected to controlled cold-resistance and wilt-resistance tests, with the result that some of the selections now available have almost twice as much resistance to bacterial wilt as the most resistant variety available before the breeding program was begun. These selections are being used for crossing with desirable varieties such as Grimm and Cossack, and the results on the whole so far suggest the definite probability that within the not-far-distant future varieties of alfalfa that combine disease resistance with other necessary and desirable qualities will be developed and made available for distribution.



FIGURE 1.—Test plots of alfalfa varieties at the Nebraska Agricultural Experiment Station: *A* and *E*, Nebraska Common; *B*, Spanish; *C*, Turkistan; *D*, Italian. The superior cold and wilt resistance of the Turkistan strain has enabled it to maintain a stand much longer than the others. Plots planted in 1922, photographed in 1932.

An idea of the economic importance of a wilt-resistant alfalfa can be had from the fact that where the disease is severe Grimm, Cossack, and Kansas Common alfalfa seldom retain a stand more than 3 or 4 years. On the other hand, the most resistant varieties obtainable at the present time, including Hardistan, Kaw, Turkistan, and to a lesser extent Ladak, under similar conditions maintain stands at least 6 or 7 years (fig. 1). In Kansas and Nebraska there are approximately 2,000,000 acres of alfalfa. If alfalfa maintained a stand 2 years longer than the present estimated average life of 5 years, 115,000 acres less alfalfa would have to be replanted annually to maintain the total acreage. To replant these 115,000 acres costs at least \$460,000. This annual cost to Nebraska and Kansas farmers would be avoided if a desirable alfalfa were grown which would last the conservative period of 2 years longer than the domestic alfalfas now available.

H. M. TYSDAL, *Bureau of Plant Industry.*

**ALLOTMENTS** Under A. A. A. Programs Obtained from Census and Other Sources To carry out the purposes of the Agricultural Adjustment Act successfully and with fairness to all sections and individuals, it

was necessary first to determine the acreage and production of the different crops by States and counties as a basis for the allotment of permissible acreage and of cash benefits. The responsibility for determination of these base-year figures on acreage and production and of the allotments for States and counties was placed upon the Division of Crop and Livestock Estimates of the Bureau of Agricultural Economics.

As groundwork for determining base-year acreages and production, the Bureau had available certain factual data, consisting of the United States census enumeration of 1930, by States and counties, and of similar annual data collected by local assessing officers for a number of important agricultural States. Supplementing these data were cotton-ginning records, by counties, collected by the United States Bureau of the Census; records of receipts of rough rice by mills; of receipts of various grains by mills and elevators; of shipments of grain and vegetables out of important producing areas; of special enumerations and surveys for limited areas; of acreage and production for many irrigation units; and of the Bureau's own estimates for past years by States, and for some States by counties.

The census figures were the main reliance for basic figures for the year 1929. As a check upon the relation of townships or other subdivisions within the county to each other, a special tabulation was made of the census records of acreage and production in these minor subdivisions for 1929. The assessors' enumerations were reasonably complete, were of next importance in determining absolute acreage and production from year to year and relationship as between counties.

As a means of checking the annual enumerations by assessors, there were available for comparison the enumerations by the Federal enumerators with those by the assessors for 1929, and the assessors' enumerations for successive years with their enumeration for 1929. The first comparison showed the approximate extent of understatement by the assessors in the census year and the latter indicated whether the successive yearly enumerations by assessors were reasonably uniform as to completeness.

### Two Main Lines of Approach

Two main lines of approach were available toward establishing county estimates in the years selected by the Agricultural Adjustment Administration as base years by which to measure relative acreage and production. The first was to take the record of acreage and production by States and break it down, by districts and then by counties, on the basis of the census record of relative acreage and production. The second was to build up from available records the indicated acreage, yield, and production by counties and districts, subsequently modifying the estimates to conform to established State totals. Both of these methods were utilized to a greater or less extent as conditions and records in the various States permitted and the results were checked against one another and by all data available from other sources. In the aggregate, a great deal of factual information was

available bearing upon the problem of acreage and production by counties.

Two major objectives were held in mind in establishing estimates of base-year acreage and production and in figuring allotments: (1) To make certain that the success of the entire program of acreage adjustment was not imperiled by giving to the farmers of any section immediate or ultimate benefits to which they were not justly entitled and (2) to be assured that each section and each producer received as nearly as possible the allotment to which the section and the producer were entitled by reason of actual plantings and yields during the base-year period.

Where droughts, floods, and other unusual situations had affected the record to the extent that it tended to deprive communities of a fair participation in the benefits of the program, the Agricultural Adjustment Administration authorities, in their discretion, formulated rules of allowances or of alternative procedures with a view to equalizing the benefits of the plan to all communities.

In making up the record of base-year performance and establishing allotments, due consideration was given to all factual data, both those assembled by the Bureau and those presented from any other source. Appeals by States and counties for larger allotments were often made on the basis of locally assembled data. Examination of such material in some instances disclosed the need for changes in the preliminary estimates and allotments but much oftener the data presented were found to be unreliable. The assessors' data were very good in some States but poor in others and entirely lacking for a majority of the States outside those of the north-central geographic division. They were not uniformly good in all counties even where available. Every effort was made to allow for the variation in completeness of these data in the different counties.

SAMUEL A. JONES, *Bureau of Agricultural Economics.*

**ANTHRAX** Control Has Been Aided by Results of Recent Experiments In anthrax-infected districts immunization of susceptible animals plays an important role in control. At present there are several immunizing agents with which animals can be made resistant to the disease. Each has a particular field of usefulness and also definite limitations.

Much new information on the relative values and limitations of six of the available anthrax-immunizing agents was obtained by the Bureau of Animal Industry through recent experimental tests on sheep. The animals used for study had had no previous contact with anthrax and carefully controlled conditions permitted the results to be evaluated on a comparative basis.

The products subjected to comparative tests were antianthrax serum, antianthrax serum and anthrax-spore vaccine in combination, anthrax-spore vaccine single injection, anthrax-spore vaccine intradermic, anthrax-spore vaccine in saponin solution, and anthrax bacterin (washed killed culture). In the tests each of these products produced definite protection against a subsequent exposure to virulent anthrax. Some variation was found, however, in the rapidity with which full immunity was produced by the different products, as well as the length of time that the respective immunities lasted.

In these tests the earliest complete protection was obtained with two of the products, namely, antianthrax serum alone and anthrax-spore vaccine intradermic, this being at 4 days after vaccination.

complete immunity having endured for a period of a year. The shortest duration of immunity was that produced by antianthrax serum alone. Definite evidence of waning of immunity was noted with this product at approximately 2 weeks after vaccination.

The results of these tests furnish sound experimental evidence indicating the particular field of usefulness of each of the products tested and add to the knowledge of the limitations to which each product is subject. This knowledge emphasizes the fact that immunization against anthrax is not merely a simple mechanical operation but a highly technical procedure that should be undertaken only by experts who are thoroughly qualified in this field. Veterinarians by reason of their special training are best fitted for controlling the disease. Additional information on these comparative tests may be obtained on application to the Bureau of Animal Industry.

W. S. GOCHENOUR, *Bureau of Animal Industry.*

**ARTIFICIAL Drying Provides Means of Preserving Feeding Value of Immature Grasses** The possibilities of growing large amounts of forage for feeding purposes, and utilizing it when in its immature stages,

have been emphasized by the advent of the commercial forage-drying machine. The purpose of preserving forage in a relatively immature condition is to obtain a roughage feed of high protein and nutrient content. The dry matter of young rapidly growing forage is high in protein, minerals, and vitamins, and low in fiber content. As the stage of maturity advances, the nutritive value of the forage decreases. This results principally from a change in the chemical composition and from a reduction in the digestibility of the nutrients.

If a satisfactory method of preservation is developed, a much larger percentage of the dairy ration can be supplied in the form of home-grown feeds. If, for instance, pasture grass can be dried artificially at a stage of maturity at which it still contains a high percentage of protein, the grass by itself, or in combination with hay and silage, will make a complete ration for dairy cows in the winter, just as pasture makes a complete ration in the summer. It would be necessary, of course, when putting up forage in this way to cut it several times during the season. Drying by artificial means could be accomplished at a time when the grass is ready to be cut regardless of weather conditions.

#### Artificial Drying Reduces Waste

Artificial drying of forages has certain advantages over the conventional way of making hay. It reduces waste through leaching and loss of leaves, and can be done regardless of weather conditions. The success and future development of this method of preserving forage crops depend upon (1) the cost of drying and (2) the effect of drying upon the feeding value of the dried product. Pasture is well adapted to frequent cropping, because of its perennial nature and its quickness



in recovery. It is also one of our highest yielding crops. During the last 4 years the Bureau of Dairy Industry, in cooperation with the Western Washington Experiment Station and the Washington Agricultural Experiment Station, has carefully studied the nutritive properties of artificially dried pasture herbage and the effect of the drying process on its feeding qualities. The pasture contained a mixture of grasses and clovers and was cut when 2 or 3 weeks of age and dried in an experimental artificial drying machine.

### Immature Grass Highly Nutritious

The high protein content of pasture herbage when cut every 2 or 3 weeks, averaging in many cases as much as 24 percent, is maintained throughout the growing season. Moreover, this immature herbage maintains a relatively constant low content of fiber throughout the season. A minor significant item in its composition, as compared with that of drier and more mature forage, is its high calcium and phosphorus content. These elements tend apparently to be more concentrated in herbage when it is growing rapidly, particularly if well distributed rains occur during the growing season.

When artificially dried pasture grass exclusively was fed to dairy heifers, it proved palatable and highly nutritious. Two-year-old heifers consumed approximately 15 pounds of the dried material per day. This was sufficient for maintenance and some gain in live weight. The digestibility of the various nutrients was not affected by the drying process. The herbage contained a digestible crude-protein content of 18 percent and a total digestible nutrient content of 65 percent. In these respects it compared favorably with many high-protein concentrate feeds.

Using grass 3 weeks old, the investigators studied the effect of the temperature of artificial drying on the digestibility and availability of the feed nutrients. Pasture herbage was dried in the machine at exhaust-gas temperatures of 250°, 300°, 350°, and 400° F. When compared with rations of green and sun-cured grass, the grass artificially dried at different temperatures did not change in chemical composition, except that drying at 400° produced a significant increase in the crude-fiber content. This indicated that portions of the more leafy materials were burned. Furthermore, the herbage that was dried at 400° had a much lower coefficient of digestibility for protein and to a lesser extent for dry matter, crude fiber, and nitrogen-free extract, than herbage dried at lower temperatures. Apparently the intense heat reduced the availability of the calcium. Nutrients in grass dried at lower temperatures were as efficiently digested and utilized as those in green and sun-cured herbage. As the temperature of drying was increased, the percentage of natural color in the herbage was adversely affected. It was evident that raising the temperature in the artificial drier to extremely high levels, to get increased efficiency in the utilization of fuel, lowers the nutritive value of the feed.

### Vitamin D in Green and Dried Grasses

Further experiments determined the vitamin D content of artificially dehydrated pasture grass, as compared with that of similar grass fed in a green and sun-cured condition. When rats received

green, artificially dried, or sun-cured herbage, in addition to a basal diet, they developed significantly higher percentages of ash in their bones than did rats receiving only a basal diet deficient in vitamin D. Either the green or the artificially dried grass produced calcification as efficiently as the herbage cured by exposure to 15 hours of sunlight. When fed as 3 percent of the dry matter of the ration, there was sufficient of the calcifying factor in the grass to cause an increase in the calcification of the bones in the experimental animals. Dehydration at high temperatures for a short time did not destroy the calcifying property of the herbage.

### Dried Grass May Displace Some Grain

Two feeding trials were conducted in which dried grass was substituted for part or all of the grain mixture fed to milking cows. In the first experiment, cows in heavy production were fed, in addition to alfalfa hay and silage, a grain and grass mixture of which 20 percent was artificially dried grass. The cows ate slightly less grain-grass concentrate mixture, gained less weight, and produced a little less milk than when they received a similar ration in which wheat bran and linseed meal were substituted for the grass. The consumption of feed and total digestible nutrients per unit of production, however, was slightly in favor of the experimental mixture.

The addition of grass to the concentrate mixture made it rather bulky, though it was palatable and readily eaten. The comparative differences were small, and indicated that where an adequate supply of artificially dried grass is available it may be efficiently substituted for as much as 20 percent of the protein-rich concentrate mixture.

In the second experiment, 2 cows were maintained on a ration of alfalfa hay and artificially dried grass for 4 weeks and then switched to an all-alfalfa ration, as compared with 2 other cows that were put on an alfalfa-alone ration and then changed to an alfalfa-hay and dried-grass ration. The addition of dried grass to the alfalfa-alone ration of milking cows caused a greater consumption of total digestible nutrients. This greater consumption of nutrients produced a larger gain in live weight and a larger output of milk and butterfat. While the nutrient consumption per unit of production was approximately the same, the increased consumption of feed brought about by the addition of dried grass to the ration caused the cows to produce more milk.

This experimental work demonstrates that a home-grown feed palatable to dairy cattle, and having a high protein content, can be produced from pastures by frequent cutting and artificial drying of the herbage; that artificial drying within certain temperature limits does not affect the nutritive value of herbage either in the organic or the inorganic constituents; and that artificially dried pasture grass may be used efficiently with other roughage feeds, and as a substitute for protein-rich concentrates in the rations of lactating dairy cows. The cost for drying equipment is the major item which limits a more general use of this means of preserving forage crops for feeding purposes.

R. E. HODGSON, *Bureau of Dairy Industry.*

## BACTERIAL Wilt of Corn Combated by Use of Resistant Strains

Bacterial wilt or Stewart's disease of corn is caused by a bacterial parasite (*Aplanobacter stewarti*). This organism grows abundantly in the vessels or water-conducting system of the corn plant and comes out as viscid yellow drops on the cut ends of badly infected stalks (fig. 2). The disease may attack the plants at any stage in their growth. Young plants may wilt and die, or if they continue to grow may remain stunted. Tassels develop prematurely, and the leaves wilt one after

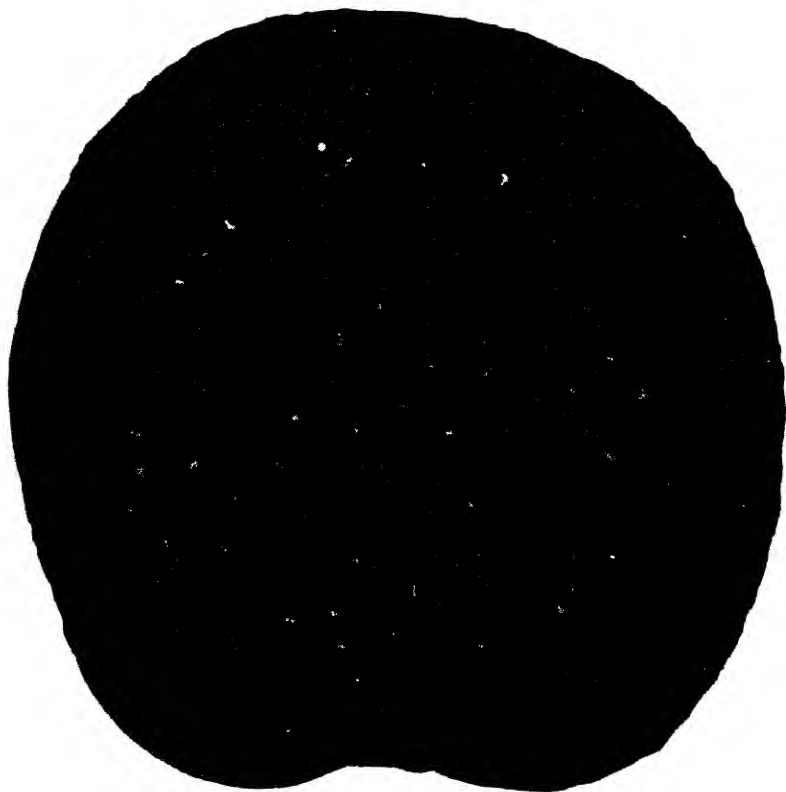


FIGURE 2.—Cross section of stalk of corn badly infected with bacterial wilt and showing yellow ooze from cut ends of vessels. Magnified three times.

the other (fig. 3). Long, light green to yellow streaks extend through the leaves. Infected plants that develop to normal height may be barren or produce only nubbins. Because of the dead and stunted plants, badly infected fields are very uneven.

This disease was first described on sweet corn in 1897 by F. C. Stewart, who found it widespread and abundant in the market gardens of Long Island, N. Y., frequently causing losses of 20 to 40 percent and sometimes destroying whole fields. He found that the earliest-maturing varieties of sweet corn were the most susceptible and that late varieties were resistant. To control the disease he

recommended that only late-maturing, resistant varieties be grown and that care be taken in selecting clean seed. His recommendations were not followed, for the most desirable varieties of sweet corn for table use are the early-maturing susceptible varieties. Market and home gardeners continued to grow them, and so to produce much infected seed. In 1899 the disease was found in New Jersey, and in 1903 it was observed for the first time in Maryland and Virginia. It was gradually found southward through Pennsylvania, Maryland, and Virginia and in the Carolinas and Georgia and westward through the Corn Belt in Iowa, Missouri, Kansas, Texas, New Mexico, and California. The disease did not extend into the northern tier of States with the exception of southern New York, southern Michigan, Massachusetts, and possibly North Dakota and South Dakota.



FIGURE 3.—Golden Bantam hybrid: A, Normal plant; B, stunted plant infected with bacterial wilt, tassels premature.

#### Damage Heavy in Recent Years

With the continued spread of the disease the annual losses also steadily increased. In most years losses were not great, but in the older disease areas, such as Maryland and Virginia, it finally became necessary to grow only the late-maturing, resistant varieties such as Stowell Evergreen and Country Gentleman. In a few exceptional years losses were heavy, and then again the disease became of minor importance. During the seasons of 1931-33 wilt was more widespread and destructive than ever before in its history. It spread northward into Wisconsin, central Michigan, and New York, into Ontario, Canada, and into Maine and New Hampshire. Throughout the Corn Belt losses were heavy in susceptible varieties, and losses of 10 percent in late resistant varieties were common. In 1932 Indiana reported a loss of 50 percent in early plantings of susceptible varieties; Pennsylvania, 45 percent; Iowa, 5 percent; New York, 10 percent; Connecticut, 3 percent; and Massachusetts, 0.5 percent. In 1933 Michigan reported 93 to 100 percent infection in early varieties such as Spanish Gold, Golden Gem, and Extra Early Bantam; 64 to 91 percent infection in midseason varieties such as Sunshine and Golden

Bantam; 10 to 29 percent in Stowell Evergreen; and 3 percent in Country Gentleman. These were percentages of infected plants and not actual losses.

This most recent epidemic of bacterial wilt occurred following a succession of mild winters. The winter of 1933-34 was much more severe throughout the Central and Northern States, and reports for the 1934 season indicate that the disease was again much less severe.

Introduction of the disease into new localities is at least partly brought about by infected seed. The wilt organism lives from one season to another inside the seed. It is not known how effective seed treatments are in controlling this seed-borne infection. The use of clean seed where the disease has not become established is important, but the use of clean seed of susceptible varieties grown where the disease does not occur is of doubtful value in wilt-infested areas. Experience has shown that such strains are often more susceptible than strains grown in wilt-infested areas.

### Organism Overwinters in Flea Beetle

The percentage of diseased plants even from badly infected seed is so low that it accounts for only a small part of the early infections on young plants in the field. Recently it has been learned that the wilt organism lives over winter in one of the common flea beetles (*Chaetocnema pulicaria*). In the spring such beetles carry it to the young corn plants on which they feed. Possibly this accounts for a large part of the early infections. A great increase in number of diseased plants during midseason also is brought about by this same beetle. Infections on the leaves may be seen starting from the feeding injuries on the outer halves of the leaves and progressing down through the leaf blade to the stalk. It was this type of leaf infection that occurred in dent corn in Illinois in 1932. The insects feed on resistant as well as susceptible varieties of corn, but on the resistant varieties the infections are much more restricted in area and develop more slowly, so that the injury is usually confined to the outer halves of the leaves. On the other hand, in susceptible varieties the bacteria work back into the stalks more rapidly, and then out into the whole plant.

The wilt organism overwinters in old, infected cornstalks in the field, but it is not known how important this is in starting the disease in the spring. Crop rotation has not been shown to be effective in controlling the disease.

The control measures recommended by Stewart in 1897 still hold good. Use clean, disease-free seed in sections where the disease does not occur, and plant resistant varieties in sections where the disease has become established. The development of wilt-resistant, early-maturing, high-quality sweet corn is making it possible to practice the second and by far the most important method of control.

### Resistant Strains

During the past several years plant breeders in the Central and Eastern States have been taking advantage of the marked differences in resistance and susceptibility of varieties of sweet corn. By methods of inbreeding and crossing they have been developing early-maturing, wilt-resistant strains which are as desirable for table use as the original early varieties which were so susceptible to wilt. In

1933 seed of one of these early resistant strains known as Golden Cross Bantam, developed by the Department in cooperation with the Purdue University (Indiana) Agricultural Experiment Station, was sold for the first time by a number of seed companies. This hybrid proved very popular. Reports from several States were encouraging. Very little wilt occurred on Golden Cross Bantam when other early-maturing varieties suffered heavy losses. From Ohio it was reported that the only good fields of early sweet corn were Golden Cross Bantam. This variety is 4 to 8 days later than the earliest Golden Bantam, but still earlier strains are being developed. A number of other early resistant strains of sweet corn, developed by the Connecticut Agricultural Experiment Station, are now being commercially produced. With the general planting of these resistant strains heavy losses from this disease can be avoided.

CHARLOTTE ELLIOTT, *Bureau of Plant Industry.*

**B**ARK Beetle Control in The establishment of the Civilian Western Forests Aided Conservation Corps in the spring of by Work of C. C. C. Camps 1933 made available a new force for the protection of our national forests and parks. Up to that time bark beetle control projects had been manned by local labor skilled in the ways of the forest. Camps comprising about 25 men were established as working units in the infested areas, wages were in line with those paid for skilled woods labor, and a thoroughly efficient job with low costs for volume of timber treated was expected and ordinarily obtained. The C. C. C. camps, as they were set up to handle all types of forestry projects, presented an entirely different sort of human material with which to conduct these campaigns. These camps were made up of labor in company units of about 200 men. Only young men between the ages of 18 and 25 were enlisted, the great majority of whom came from the cities and included boys unskilled in the use of woods tools. The training of the C. C. C. men in the physical work of felling, limbing, and peeling trees at first required considerable attention. Gradually, however, the men became proficient in the use of tools.

In California a fairly large-scale program was carried on during the summer of 1933 on national parks and in national-forest recreational areas. This was possible because climatic conditions permitted the use of solar heat, in lieu of fire, for destroying the bark beetle broods during the season of high fire hazard (fig. 4). In southern California the work was concentrated in areas of high recreational value, where 4,957 trees containing the equivalent of 2,760,000 board-feet of lumber were felled and the insects destroyed. In the Yosemite National Park work was continued throughout the summer in the sugar pine forests, where the trees were of great size and value. During the winter months the work was conducted to better advantage, as many of the boys who had acquired experience during the summer reenlisted, and the winter program was concentrated in commercially valuable timber on the Modoc, Lassen, and Stanislaus National Forests. In the entire State 9,200 trees with a volume of 8½ million board-feet were treated by C. C. C. labor between July 1, 1933, and April 1, 1934. Approximately 350,000 acres of forest land were included in the program. Forty technical men were employed as insect-control foremen and

spotters for the supervision of these projects. The number of enlisted men assigned to this activity ranged from 200 to 300, according to the seasonal conditions of the work.

In Washington and Oregon control work in the suppression of bark beetle outbreaks was conducted largely on national parks and Indian reservations. During the spring of 1933 the two C. C. C. camps in Crater Lake National Park contributed 4,581 man-days in the treatment of 6,349 infested lodgepole pine trees. This work represented the final clean-up of an infestation that had been running for several years, and was so effective that only 13 infested lodgepole pine trees could be located for treatment in 1934. In 1934 the program for this park consisted in mopping up some scattered infestations in ponderosa and sugar pine, and 142 trees were treated by the C. C. C. boys. On the Yakima Indian Reservation a virulent outbreak of the western pine beetle was combated on 7,160 acres by crews of Indian boys in

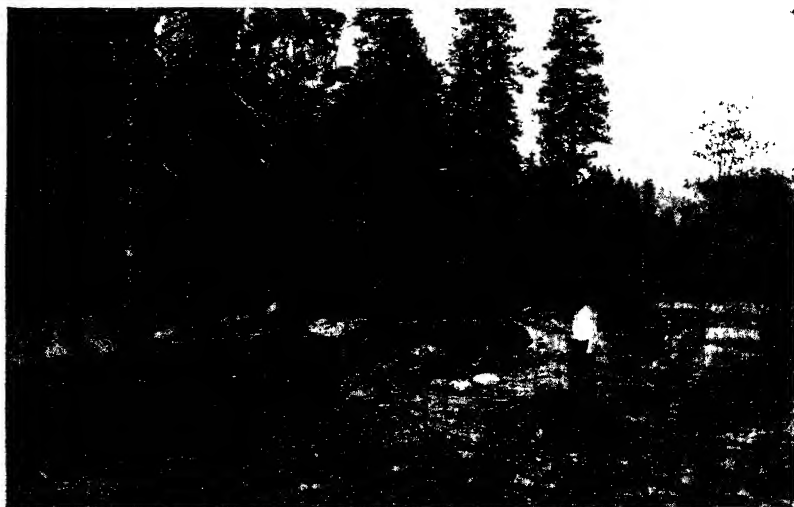


FIGURE 4.—C. C. C. workers in Yosemite National Park preparing timber for destruction of broods of the western pine beetle by solar heat.

the C. C. C. camps. A total of 2,383 infested ponderosa pines were felled, peeled, and burned during the fall of 1933 and spring of 1934, resulting in a marked reduction of timber losses on this reservation.

In the northern Rocky Mountain region several thousand trees in the Yellowstone National Park and on the Medicine Bow, Montezuma, Kootenai, and Shoshone National Forests were treated by C. C. C. labor during 1933 and still more in 1934.

In addition to control work, some special research and survey projects were carried on with the aid of C. C. C. labor. A few men, who had sufficient education and who showed adaptability for such work, were placed on special assignment under the direction of the Bureau of Entomology. These men worked, as assistants, immediately under a forest entomologist in obtaining basic data needed in determining the status of the bark beetle populations in areas where control work was contemplated. In California C. C. C. men aided in a study of the effects of a cold wave during the winter of 1932-33, which killed a large

proportion of the beetle broods, by determining the area affected by the cold. In Oregon and Washington and in the Rocky Mountains selected men from the C. C. C. camps assisted in conducting surveys to determine the need for control. During 1933, 37 of these men covered 18,240 acres of sample plots with intensive check cruises. They also assisted in analyzing the emergence from 2,879 square feet of bark affected by the winter freeze to determine the influence of this cold weather on bark beetle outbreaks.

J. M. MILLER,

*Bureau of Entomology and Plant Quarantine.*

## BEECH Scale Scouting Reveals Infestations in Four New England States

The beech scale was first discovered in the United States in 1929 on American beech in the Arnold Arboretum, Boston, Mass. Its first occurrence in North America, however, was reported in 1911, when it was found infesting both native and ornamental European beeches in the vicinity of Halifax, Nova Scotia. In 1932 it was reported to have spread generally throughout the Maritime Provinces of Canada, and that many of the infested beech trees had died. This insect is well distributed over western Europe, and in some countries the infestation has at times been severe and followed by an extensive killing of beech trees.

The discovery of the scale in the United States on American beech (*Fagus grandifolia* Ehrh.), and also on varieties of European beech (*F. sylvatica* L.), threatened danger to the beech in this country. In 1931 the Bureau of Entomology, through its laboratory at Melrose Highlands, Mass., undertook a survey of the beech growing on or near many of the roadsides in each of the New England States. In this work they were assisted by the Maine Forest Service, the New Hampshire State entomologist's office, and the Massachusetts Department of Conservation. Scouting for new infestations was carried on for short periods each



FIGURE 5.—Trunk of American beech tree heavily infested with the beech scale.



year and occasional notes were made on the biology of the beech scale until September 1933, when a substantial allotment of E. C. W. funds made it possible to enlarge the scope of the work considerably.

As a result of this work infestations of the scale have been located as follows: Maine, 57 towns in 8 counties; New Hampshire, 3 towns in 2 counties; Massachusetts, 14 towns in 4 counties; and Connecticut, 1 town. The heaviest infestations have been found in Washington, Hancock, and Waldo Counties, Maine, where large forested areas of native beech are involved, and in scattered growth in eastern Massachusetts.

The beech scale has a single generation a year. In New England eggs are deposited from the middle of June until August. Hatching begins about the 1st of August, and by the 1st of October practically all the crawlers, as the newly hatched larvae are called, have become fixed by inserting their beaks in the bark. The secretion of woolly wax begins immediately and continues for a time in the fall, but the maximum deposition occurs the following spring and summer. In heavy infestations this wax may completely cover the trunk (fig. 5) and the under sides of the larger branches. Trees of all ages, including seedlings and saplings, have been found infested with the scale. The scale overwinters as the fixed immature form. In May it transforms to a preadult, and about 15 days later it becomes mature. No males or winged forms of this species are known. Distribution is accomplished by the wind and by transportation of eggs and crawlers by birds, insects, etc.

### Permanent Sample Plots Established

In order to study the injury caused by this insect and the associated fungus, *Nectria* sp., several permanent sample plots have been established in southeastern Maine. A survey of conditions on these plots in October 1933 showed that trees infested with the scale were less healthy than uninfested trees. Many dead and dying beeches were found in Washington and Waldo Counties, and such trees were usually infected with a fungus belonging to the genus *Nectria*. This fungus has not been found associated with the scale in New Hampshire, Massachusetts, or Connecticut.

In feeding, the scale inserts its beak into the bark for about 1.5 millimeters. Individual scales probably cause little or no injury, but when colonies of several hundred per square inch are present, the outer layer of the bark is killed and becomes brown. When a tree is heavily infested with the scale, extensive areas, often more than 50 percent, of the outer bark are killed. When the bark is removed, it is found that the killing often extends to the cambium and occasionally the sapwood is discolored. Slime fluxes often develop, and the cambium is killed for a radius of 2 or 3 inches from the point of injury.

Whether the tree would ultimately die from such injury without the aid of the *Nectria* has not yet been determined, but this seems to be possible if the areas of affected sapwood are sufficiently large to girdle the tree. If for some reason, such as winter-kill, the scale infestation disappears, the tree often shows recovery by producing healing tissue around the wound. When this takes place, a depression or pit is formed in the bark, giving the trees a gnarled appearance, especially

where the pits are numerous. In Washington County, Maine, many trees show these pits.

Observations made during May and June 1934 showed that the scale is very susceptible to low winter temperatures. In southeastern Maine over 95-percent mortality occurred above the snow line, while near the ground and on roots there was little mortality that could be attributed to low temperatures. In the vicinity of Boston, Mass., there was no appreciable mortality from this cause.

### One Natural Enemy of Importance

Only one natural enemy of importance has been found in New England. The predacious ladybird beetle known as the twice-stabbed ladybird, *Chilocorus bivulnerus* Muls., was especially effective in southeastern Maine during the spring and summer of 1934. With the reduced host population resulting from the abnormally low temperatures of the previous winter, which affected the beetle little or not at all, an opportunity was afforded for the predator to be most effective as a control agent. Observations at Liberty (Waldo County), Maine, have shown that on heavily infested trees, upon which the beetles prefer to congregate, the scale population has been reduced by fully 90 percent; on lightly infested trees the percentages of hosts destroyed were considerably less.

The impracticability of spraying large forested areas is recognized, but there is a need for controlling the beech scale by artificial methods in park and ornamental plantings. This insect may be controlled with a dormant spray of lime-sulphur, either the liquid form diluted at the rate of 5 gallons in 95 gallons of water or the dry mixture at the rate of 12 pounds to 100 gallons of water. Oil sprays should not be used indiscriminately on beech, as some brands are liable to injure the trees if applied in sufficient strength to kill the scale. The use of oils in controlling the beech scale is being given further study.

C. W. COLLINS and R. C. BROWN,  
*Bureau of Entomology and Plant Quarantine.*

**B**EEF Cattle Especially Adapted to Gulf Coast Area Being Developed The popular breeds of beef cattle in the United States—the Aberdeen-Angus, Hereford, and Shorthorn, all of British origin—have adapted themselves well to the greater portion of our vast beef-production areas. Owing to a combination of factors largely climatic, the breeds mentioned do not meet fully the requirements of the extreme South, particularly the Gulf coast area. The principal reasons appear to be the warm climate, low feeding value of native vegetation, and lack of sufficient hardiness in highly bred beef cattle to combat semitropical conditions.

The solution to this difficulty of adaptation appears to be not the finding or development of an entirely new breed, but rather a combining of the beef-producing ability of the British breeds with hardiness to tropical or semitropical conditions, as observed in some other foreign breeds and types. A distinct beginning in this direction was made in 1906, when the Pierce Estate of Wharton County, Tex., brought from India 30 bulls and 3 cows of the Nellore and other breeds of Brahman cattle. These were used largely in crossing with Here-

fords and Shorthorns. In 1924 another noteworthy importation of Indian cattle was made by John T. Martin, San Antonio, Tex. It consisted of 29 bulls, principally of the Guzerat breed, that had previously been imported into Mexico from South America. The Guzerat bulls were larger and beefier than those of any previous importations, and they have "nicked" well with the native cattle, as well as with Herefords and Shorthorns in southern Texas.

Using both Indian and British breeds of cattle, Robert J. Kleberg, Jr., Kingsville, Tex., has been successful, after about 15 years of constructive crossbreeding, in developing a meritorious Brahman-Shorthorn crossbred type of approximately three-eighths Brahman five-eighths Shorthorn blood. This type, which he named "Santa Gertrudis", is red in color, very deep of body, of good beef conformation, hardy with extreme "scale" (weight for age), showing great adaptability and seemingly breeding true to type.

#### Experiments Show Influence of Brahman Blood

The value of Brahman breeds crossed with Hereford and Shorthorn cattle is evident also in breeding and feeding experiments conducted

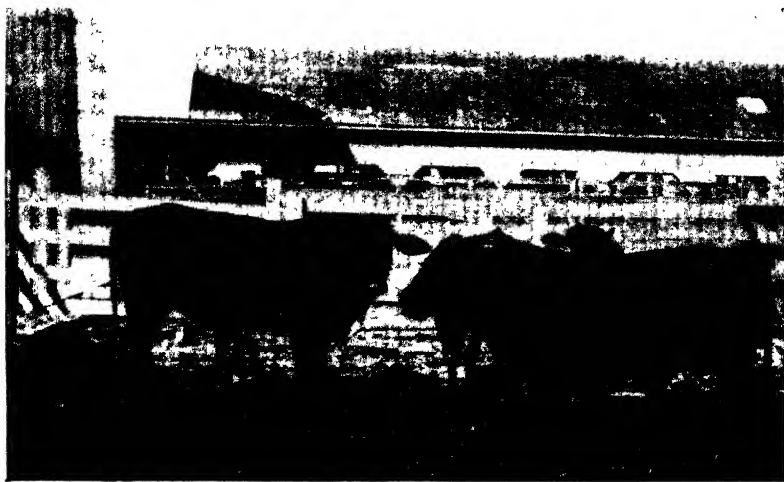


FIGURE 6.—First-cross yearling Guzerat-Aberdeen-Angus bulls.

by the United States Department of Agriculture at the Iberia Live-stock Experiment Farm, Jeanerette, La., and at Kingsville, Tex., in cooperation with the State agricultural experiment stations of Louisiana and Texas. These and other investigations of the Department in cooperation with private breeders indicate that Guzerat and Nellore cattle have considerable value when crossed with established beef breeds in the development of a beef-type crossbred that will utilize the native grasses of the Gulf coast country to advantage in the production of cattle to be finished on pasture.

Experimental data show that part-Brahman calves weighed 91 pounds more at weaning time off grass than highly bred calves of the British breeds under the same conditions. This increased weight, together with a slight increase in selling price, enabled the part-

Brahman calves to bring a greater gross return of approximately \$6 per calf. In dry-lot fattening the part-Brahmans compared favorably with highly bred beef calves in fattening periods of 150 days or less, but for longer periods they were not so satisfactory, making smaller gains and using more feed per unit of gain. Part-Brahman cattle, however, were usually superior in dressing percentage and this usually offset the higher carcass value of the non-Brahmans.

The foregoing observations of the comparative performance of purebred beef cattle and Brahman crossbreds indicated the possibility of developing beef cattle still more adaptable to the area and more acceptable to the meat trade than any yet produced. About 3 years ago, in the hope of developing a crossbred having a small percentage of Brahman blood and the polled characteristic, solid color, and beefy conformation of the Aberdeen-Angus breed, the Department began a project at Jeanerette, La. Here purebred Aberdeen-Angus females were bred to a purebred Guzerat bull. More than 83 percent of the first generation of calves were black in color, but all the bull calves had either horns or scurs and 73 percent of the heifers showed signs of horns. The conformation and color of the first-generation crossbred Guzerat-Aberdeen-Angus offspring (fig. 6) have been rather satisfactory, being superior to those produced in the early experiments with Brahman bulls and Hereford and Shorthorn cows. Four first-generation heifers were bred to an Aberdeen-Angus bull with the result that the next generation of calves (one-fourth Guzerat and three-fourths Angus) were 100 percent polled and 100 percent black.

#### Africander Cattle Being Bred Pure and in Crosses

The desire of cattlemen in southern Texas to import additional foreign cattle, developed under semitropical conditions, to cross with their

beef breeds and the impossibility of importing more Brahman cattle because of quarantine restrictions, led to an importation of Africander cattle. The Bureau of Animal Industry cooperated in this undertaking by furnishing the writer's services for selecting the cattle and handling the importation from Africa to the United States.

During October 1931, 16 bulls and 13 females of the Africander breed were selected in the Prov-



FIGURE 7.—Two-year-old purebred Africander heifers 1 year after arrival in the United States.

inces of Transvaal, Orange Free State, and Cape of Good Hope, in the Union of South Africa. The cattle arrived at New York in December, were quarantined for 90 days, and sent to the King and Kenedy ranches at Kingsville and Sarita, Tex., respectively.

The cows and heifers of this importation (fig. 7) have been bred each year to purebred bulls of the same breed, to increase the number of purebred Africanders. Every female in the original importation

has proved to be a breeder, the older cows having produced calves each year since their arrival.

The Africander bulls, in addition to their use as sires of purebreds, have been used extensively in crossbreeding experiments with Short-horn, Hereford, Devon, and Brahman cows on ranches in southern Texas. Several hundred crossbred calves have been produced from these matings. The crossbreds from the Shorthorn cows have been very promising as calves and yearlings. They have excellent beef conformation, being deep, wide, and smooth, and are of a deep-red color. Crossbred calves from the Hereford cows have shown great uniformity in type, conformation, and color markings, and have responded well to feeding in the dry lot. Their gentleness in the feed lot, as compared with other breeds and crossbreds having Brahman blood, was particularly noticeable. In the crossbreds having Africander blood, there has been a degree of smoothness not found in the crossbreds carrying Brahman blood.

### Polled Crossbred of Beefy Type Sought

At Jeanerette, La., the Department is testing a cross resulting from the use of Africander bulls with Aberdeen-Angus cows. Ten choice registered Aberdeen-Angus heifers and two purebred red Aberdeen-Angus females—red color being unusual in this breed which is typically black—were bred during the summer of 1934 to an Africander bull, in the hope of developing and fixing a polled type of crossbred that will be beefy and of a desirable color, either red or black.

Although cattle with either Brahman or Africander blood may not have a commercial place in many of the important beef-production areas, their hardiness and ability to utilize the southern grasses near the Gulf coast advantageously make the studies here outlined of interest to producers in that section and in regions where droughts are frequent. Brahman and Africander cattle were developed in countries where grazing conditions were extremely poor and watering places often far apart.

It must be kept in mind, however, that notwithstanding the merits of Indian and African cattle the characteristics which are most sought after in the desirable beef carcass probably can be obtained best by using a predominance of blood of beef breeds of British origin.

W. H. BLACK, *Bureau of Animal Industry.*

**B**ERRY Breeding Has Made Available Some Valuable New Varieties Up to the present time 7 new varieties of strawberry, 2 of raspberry, 1 of blackberry, and 1 of gooseberry have been introduced as a result of the breeding work of the United States Department of Agriculture.

The Blakemore strawberry, introduced 5 years ago, is a superior general-market variety for the South which is especially desirable for use by preservers. About 10,000 acres of this variety fruited in 1934. The Southland is a high-quality home-garden variety for the South, the Redheart a canning and freezing variety for Oregon and Washington, the Bellmar a handsome general-market sort for Maryland and New Jersey, and the Dorsett, Fairfax, and Narcissa very high-quality market and home-garden sorts, Dorsett and Fairfax for the

region from Maryland to southern New England and west to Kansas and Nebraska, and Narcissa for Oregon and Washington (fig. 8).

Strawberry breeding is being continued to develop high-flavored, firm, commercial varieties for the South, late commercial varieties for the North, canning and preserving varieties for the Northwest, root-rot-resistant varieties, etc. Over 1,000 selections from hun-

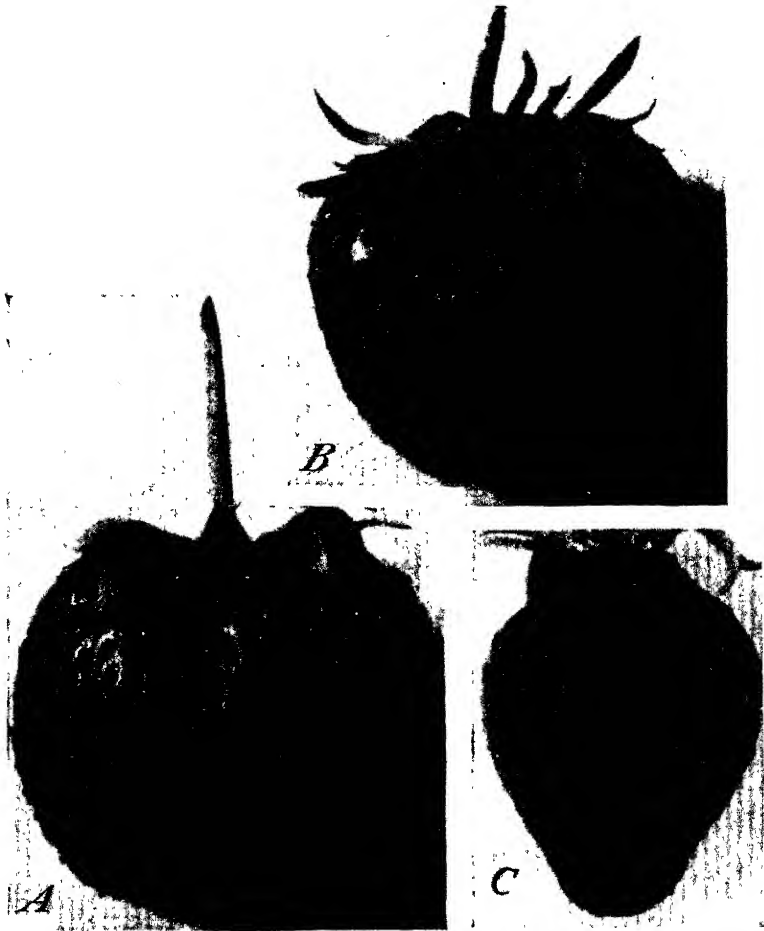


FIGURE 8.—Three of the new strawberries originated in the breeding work of the United States Department of Agriculture: A, Fairfax, a sweet, highly flavored table berry; B, Dorsett, a slightly more tart, highly flavored table berry; C, Blakemore, a tart, general market and preserving variety.

dreds of thousands of seedlings are being tested for their value for such purposes.

The Potomac purple raspberry has been introduced as a hardy canning and preserving variety relatively resistant to leaf spot and anthracnose (fig. 9). The Van Fleet, a hybrid between an Asiatic wild raspberry and the Cuthbert red raspberry, has been introduced for southern regions as a home-garden sort. Other Asiatic wild rasp-

berries are being hybridized with red, black, and purple sorts in an attempt to get kinds adapted to the Southern States. One of these recently hybridized sorts is a trailing red raspberry which succeeds several hundred miles south of the present commercial raspberry regions and which is resistant to the common serious diseases.

The Brainerd blackberry is a hybrid of the Himalaya, a European blackberry, and an American erect blackberry, and is a productive variety of high quality which is adapted to regions from North Carolina to Maryland and west to the Pacific coast. It ripens about a month after American blackberries. Other blackberry selections similar to the Brainerd are being tested. Breeding work is also

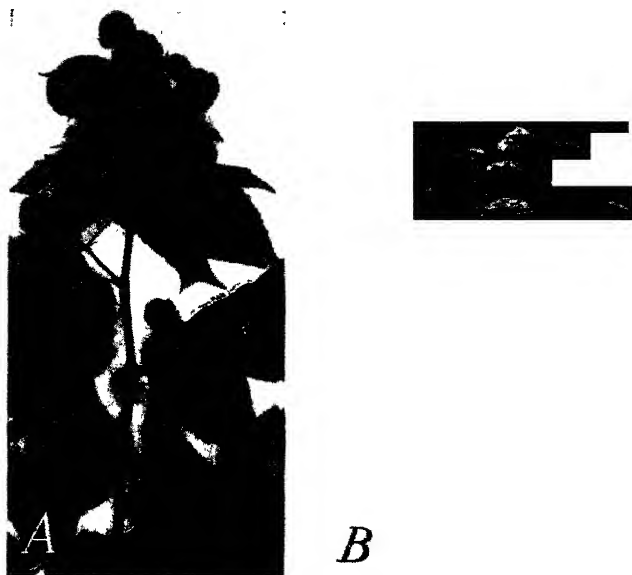


FIGURE 9.—A, Cluster of the Potomac purple raspberry, a hardy preserving and canning sort; B, a quart of the Potomac.

under way with selections of the native wild blackberry of the Pacific coast from which the Logan is derived.

G. M. DARROW and G. F. WALDO,  
*Bureau of Plant Industry.*

**B**LANKETS Vary Widely in Desirable Properties, Various Tests Indicate Many homemakers want more definite facts than are now available on the quality of the goods offered on the retail market. Accordingly, the Bureau of Home Economics has been testing some of the staple textile materials. A study of 30 household blankets purchased in retail stores has been carried on this past year.

An effort was made to decide what qualities the consumer desires most. This varies with different articles. In the case of blankets, warmth and durability are usually given first consideration.

The warmth of a blanket depends upon how much it will resist the passage of heat and air. In textile laboratories heat transmission is determined by measuring the amount of heat required to maintain a disk at body temperature when it is covered by a piece of the blanket and the other side of the sample is exposed to air at room temperature. The results are reported as the number of calories per second that will pass through 1 square foot of blanket when there is a temperature difference of 1° C. between the upper and lower surfaces of the fabric. Thus the lower the heat transmission, the better insulator the blanket will be.

As is shown in table 1, the heat transmission of the 30 blankets tested varied greatly. In the group of 25-percent wool blankets, one transmitted 0.081 calories and another 0.142 calories, almost twice as much. The differences within this and other groups were due of course to the construction of the fabric and the different amounts of napping.

TABLE 1.—A summary of some of the physical properties of 30 blankets

| Composition and blanket      | Composition |         | Weight per square yard | Thickness | Thread count |         | Breaking strength of filling grab method | Heat transmission calories per ° C. per second per square foot | Air permeability cubic feet per minute per square foot per pound pressure difference |
|------------------------------|-------------|---------|------------------------|-----------|--------------|---------|--|--|--|
|                              | Wool        | Cotton  |                        |           | Warp         | Filling |  |  |  |
| All wool:                    | Percent     | Percent | Ounces                 | Inches    |              |         | Pounds                                   |  |  |
| A.....                       | 100.0       | 0       | 14.9                   | 0.132     | 26.7         | 18.3    | 50.4                                     | 0.060  | 85   |
| B.....                       | 100.0       | 0       | 14.1                   | .172      | 34.0         | 25.5    | 18.8                                     | .057   | 69   |
| C.....                       | 99.5        | 0.5     | 13.1                   | .126      | 25.5         | 34.0    | 14.0                                     | .074   | 122  |
| D.....                       | 100.0       | 0       | 13.0                   | .149      | 31.5         | 26.9    | 51.9                                     | .051   | 95   |
| E.....                       | 100.0       | 0       | 12.5                   | .143      | 29.0         | 28.0    | 21.5                                     | .059   | 106  |
| F.....                       | 99.6        | 0.4     | 12.1                   | .137      | 24.4         | 33.1    | 26.4                                     | .063   | 94   |
| G.....                       | 100.0       | 0       | 11.2                   | .146      | 30.0         | 13.3    | 10.9                                     | .059   | 155  |
| H.....                       | 100.0       | 0       | 10.4                   | .122      | 24.1         | 24.9    | 12.4                                     | .079   | 119  |
| I.....                       | 100.0       | 0       | 8.6                    | .093      | 29.7         | 30.7    | 18.0                                     | .108   | 149  |
| J.....                       | 100.0       | 0       | 8.5                    | .086      | 26.7         | 25.3    | 28.5                                     | .117   | 173  |
| K.....                       | 100.0       | 0       | 8.4                    | .085      | 29.0         | 27.7    | 10.7                                     | .099   | 165  |
| Wool and cotton (household): |             |         |                        |           |              |         |  |  |  |
| L.....                       | 80.4        | 19.6    | 14.7                   | .180      | 32.1         | 31.3    | 60.2                                     | .064   | 115  |
| M.....                       | 83.9        | 16.1    | 12.2                   | .144      | 39.5         | 56.4    | 22.0                                     | .059   | 115  |
| N.....                       | 46.4        | 53.6    | 11.6                   | .141      | 35.0         | 47.1    | 13.7                                     | .078   | 99   |
| O.....                       | 28.3        | 71.2    | 12.4                   | .146      | 48.1         | 29.0    | 33.9                                     | .084   | 94   |
| P.....                       | 28.2        | 71.8    | 7.0                    | .072      | 38.0         | 19.7    | 14.7                                     | .111   | 176  |
| Q.....                       | 26.0        | 74.0    | 7.5                    | .079      | 37.4         | 32.0    | 4.6                                      | .117   | 146  |
| R.....                       | 25.5        | 74.5    | 9.9                    | .086      | 21.9         | 24.0    | 18.4                                     | .142   | 114  |
| S.....                       | 24.7        | 75.3    | 11.8                   | .130      | 35.5         | 44.3    | 34.7                                     | .081   | 100  |
| T.....                       | 16.5        | 83.5    | 8.2                    | .082      | 38.3         | 28.7    | 7.6                                      | .116   | 83   |
| U.....                       | 5.6         | 94.4    | 6.9                    | .076      | 36.1         | 24.1    | 20.7                                     | .120   | 95   |
| Cotton:                      |             |         |                        |           |              |         |  |  |  |
| V.....                       | 7.8         | 92.2    | 9.4                    | .106      | 34.2         | 32.0    | 19.2                                     | .095   | 105  |
| W.....                       | 2.3         | 97.7    | 11.1                   | .124      | 44.9         | 34.6    | 21.1                                     | .094   | 71   |
| X.....                       | 1.2         | 98.8    | 7.6                    | .068      | 41.6         | 27.7    | 9.6                                      | .064   | 80   |
| Y.....                       | 0           | 100.0   | 4.6                    | .040      | 27.1         | 24.9    | 11.0                                     | .141   | 147  |
| Camp:                        |             |         |                        |           |              |         |  |  |  |
| 1.....                       | 81.1        | 18.9    | 12.2                   | .082      | 19.5         | 15.7    | 10.5                                     | .113   | 64   |
| 2.....                       | 61.7        | 38.3    | 12.4                   | .097      | 22.7         | 20.0    | 18.9                                     | .123   | 59   |
| 3.....                       | 58.6        | 41.4    | 14.8                   | .118      | 37.7         | 35.0    | 23.8                                     | .097   | 44   |
| 4.....                       | 49.3        | 50.7    | 19.1                   | .150      | 23.0         | 27.8    | 33.6                                     | .084   | 44   |
| 5.....                       | 29.4        | 70.6    | 12.6                   | .087      | 22.0         | 19.0    | 25.6                                     | .136   | 46   |

### Measuring the Air Permeability

The air permeability of a fabric is a very different property from its heat-insulating power. A blanket may be warm in still air but offer little protection in a drafty place or out of doors. The per-



meability of a fabric to air is measured by reading the pressure drop across the sample and across a calibrated orifice (a circular opening) when air is drawn through the fabric and the orifice. It is expressed as the number of cubic feet of air that will pass through 1 square foot of fabric in 1 minute when there is a pressure drop of 1 pound. Of two blankets with the same heat transmission, the one with the lower air permeability will be the warmer. The air permeability of the camp blankets tested varied from 44 to 64 cubic feet while those for the household blankets ranged from 69 to 176 cubic feet. Household blankets do not need to be so resistant to moving air since they are generally used indoors and with a sheet or other cover.

The durability of a blanket depends on its resistance to abrasion and its breaking strength. There is no standardized abrasion test. The breaking strength is measured by the number of pounds (pull) required to break 1 inch of the fabric. Table 1 shows quite a range of values for this property. For example, among the all-wool blankets, one had a filling strength of 52 pounds and another only 11 pounds, with the rest scattered in between. Similarly the 25-percent wool group ranged from 5 to 35 pounds in the filling breaking strength.

Blankets generally are weaker in the filling direction than in the warp because the filling yarns have been brushed up to form the nap. Therefore, only the breaking strength of the fabric fillingwise is reported, since after all a fabric or any other material is only as strong as its weakest point. All blankets are napped, some more than others, but the construction must be such that raising the nap will not seriously injure the foundation fabric. Close, loosely twisted filling yarns made of long fibers give a durable nap that will not pluck off easily or come off when laundered. The thread count or number of threads in 1 inch indicates the closeness of weave.

The weight per square yard of the blanket is also significant to the purchaser, since, if the fibers are the same kind, this is a way of telling how much fiber is being obtained for the money expended. All-wool blankets weigh from 8 to 15 ounces per square yard and 25-percent wool from 7 to 12 ounces. The warmth and durability are dependent on weight. As shown in the table, blankets I, J, and K, which are much lighter in weight than the other eight all-wool ones, transmitted much more heat, in some cases twice as much. The air permeabilities were also high. A desirable all-wool blanket has a minimum weight of 12 ounces per square yard.

The thickness was measured with a gage known as a compressor which measures the thickness while there is a definite pressure on the fabric. The 30 blankets analyzed varied as much in thickness, thread count, and air permeability as they did in heat transmission, breaking strength, and weight.

MARGARET B. HAYS, *Bureau of Home Economics.*

**B**OTULISM is a Factor in the Decrease of Western Waterfowl. In these days of apprehension regarding the welfare of our wild waterfowl—when added restrictions are being placed on hunting and there is increased activity in refuge establishment and in the restoration of former aquatic environments—the losses due to disease must not be overlooked. Persons who have witnessed serious outbreaks of botulism among ducks in

the West are already alarmed on this score, but many sportsmen and conservationists of the East, where the malady does not occur in its devastating intensity, do not yet realize the extent of waterfowl losses from this cause.

It was in 1910 that the western duck sickness, now known to be a form of botulism, first struck with unexpected violence at Great Salt Lake, Utah, and left in its wake literally hundreds of thousands of dead waterfowl and shore birds. The sheer intensity of this early epizootic has never since been equaled, although certain outbreaks of ensuing years have been strongly reminiscent of that early catastrophe, and the aggregate losses of western bird life from this one malady can truthfully be said to be in the millions.

Even as recently as October 1932 a serious outbreak at the north end of Great Salt Lake left dead waterfowl on the south shore of Willard Spur in numbers varying from 8,000 to 10,000 to the linear mile (fig. 10). It was estimated that fully 250,000 birds perished from



FIGURE 10.—Duck-sickness casualties on the shore of Willard Spur, Utah, in 1932.

this form of botulism in this general area in that year. Only 3 years earlier (1929), losses, estimated to be from 100,000 to 300,000 birds, occurred at the mouth of the Bear River nearby. In 1925, 100,000 waterfowl and shore birds died at Lake Malheur, Oreg., and that same year in northern California from 25,000 to 50,000 succumbed at Tule Lake. Earlier reports (1912) tell of 30,000 birds actually being picked up on the Weber River flats, Utah, and more than 44,000 gathered and buried on the grounds of one Utah duck club between August 22 and September 21 of that year. Even from Canada have come reports of tens of thousands dying at certain lakes in years of severe outbreaks. Such cases, are of course, extreme and fortunately are not of annual occurrence, but some birds perish from this sickness each year at all the principal points of infection, and when circumstances conspire to aggravate the menace, the mortality may become a matter of national concern.

### Geographical Range of Botulism

The range of botulism as an epizootic among wild birds conforms roughly to that of the alkaline waters and soils of the West. It extends from points in Saskatchewan and Alberta to the Mexican border and beyond; and from lakes in the eastern part of the Dakotas, southwestern Minnesota, western Nebraska, and the Panhandle of Texas, west to southern Oregon and the warm valleys of California. Within this range during the past 20 years the malady has appeared at an ever-increasing number of localities. Places where it had not previously been recorded may suddenly become the scene of pronounced mortality. Whether this is indicative of actual spread of the causative organism, or whether an increasing number of favorable environments are being created through changes in water conditions, is not clear, but there is no doubt that the likelihood of western waterfowl encountering areas of infection has increased perceptibly during the past two decades.

Correcting earlier concepts (according to which the malady, then called "western duck sickness", was considered to be a direct intoxication by alkali), recent studies by the Bureau of Biological Survey have shown the disease to be of bacterial origin. The micro-organism involved, technically known as *Clostridium botulinum*, type C, is an anaerobic saprophyte, thriving and producing under suitable conditions a powerful toxin to which most birds and some mammals are susceptible. The essentials for the bacterium's growth and toxin production in the field are quantities of dead organic matter, animal or vegetable, stagnation, reasonably high temperatures, and an alkaline (as opposed to an acid) environment. These conditions frequently are met in the West, where alkaline mud flats or shallow-water areas may contain quantities of dead organic matter in the form of the bodies of innumerable entomostraca, insects, mollusks, and other creatures, large and small. Dead vegetable matter also, including even grain from the season's crop, has shown to be a medium for toxin production when submerged in stagnant pools of alkaline water.

This disease is in fact nothing more than a form of food poisoning, and the likelihood of its occurrence is dependent primarily upon conditions affecting the welfare of a micro-organism, rather than on a weakened or predisposing condition of the victim. The number of species of North American wild birds known to have been affected by botulism under natural conditions totals 69, in 21 families, but it is the puddling duck or probing shore bird that, by reason of its feeding habits, is most likely to encounter and ingest the toxin. The browsing goose or the fish-eating tern, for instance, though susceptible, is less likely to contract the malady.

Many bird victims of botulism may be saved by removing them from infected areas and providing them dry and wholesome quarters in which to recuperate, but under field conditions there is little hope for individuals that have taken lethal doses.

### Method of Combating the Malady

Since botulism, as an epizootic among wild birds, is essentially dependent on the existence of an unwholesome feeding environment, the most effective and lasting method of combating the malady lies in altering conditions affecting the water areas concerned. There

may be means yet to be discovered whereby this can best be done, but at present there are two ways: Either by draining and drying the infected area to the point where it will be wholly unattractive to waterfowl and unproductive of duck foods; or, better, by maintaining deep and stable water depths. By the latter means temperatures are lowered, the possibility of toxin formation is reduced, and any toxin that has been evolved will soon be dispersed or diluted to the point of harmlessness. The efficacy of water handling has been demonstrated many times and is the basis of the provisions made for waterfowl at the extensive Bear River Migratory Bird Refuge maintained by the Bureau of Biological Survey in Utah. The cause of the conditions favoring botulism in many cases has been the diversion of water for irrigation and other purposes, with the result that water and marsh areas that once maintained reasonably constant levels during summer, have been subject to great fluctuations in water depth and have often exposed extensive mud flats during periods of high temperature. Such conditions must be remedied to prevent botulism from continuing to take, perhaps increasingly, its annual toll of western waterfowl.

E. R. KALMBACH, *Bureau of Biological Survey.*

**BROWN-TAIL-MOTH Control** The brown-tail moth was first  
**Work Under C. W. A. Greatly** found in the United States in  
**Reduces Abundance of Pest** Somerville, Mass., in 1897. It

spread rapidly into all the New England States, and also into Canada, and became so injurious and obnoxious that its suppression became imperative. Since that time work has been carried on to keep this pest under control. The work has consisted chiefly in destroying the silken webs in which the caterpillars spend the winter, although spraying in June or July and the introduction of parasites that keep the insect in check in its native habitat, Europe, as well as quarantines, have also been of value. As a result the abundance of this pest has been greatly reduced, and for the past 10 years it has been found only in Massachusetts, Maine, New Hampshire, and Vermont.

In the summer of 1932 the larvae of this insect were unusually abundant, particularly in Maine and New Hampshire, but control measures were not applied so generally as usual. In 1933 large areas of orchards and ornamental and shade trees, and in some sections forest trees, were completely defoliated. Conditions were such that numerous complaints were made by residents, and localities frequented by summer visitors suffered from loss of business. After the foliage had dropped in the fall, it was evident that the infestation was unusually serious, and in many sections the trees were literally loaded with the winter webs of the pest. There was every indication that if nothing was done the insect would be so abundant in the summer of 1934 that greater areas would be defoliated and that heavy migration of the moth would result in spreading the insect to uninfested territory, possibly beyond the New England States. The urgent need for action was evident. It was believed that with adequate financial support and a properly organized campaign the pest could be brought under control and a beginning made in exterminating the insect.

### C. W. A. Project Approved

On December 1, 1933, a Federal project was approved by the Civil Works Administration for the States of Maine, New Hampshire, Vermont, and Massachusetts, to be administered by the Bureau of Plant Quarantine, United States Department of Agriculture, in co-operation with the State entomologists and the moth superintendents in the cities and towns. An expenditure of \$870,850 was authorized, and the work was organized as rapidly as possible.

It was necessary to close this work on February 15, 1934, and because of the time required to organize it, and the severity of the weather and heavy snowfall throughout most of the territory, it was not possible to complete the project as planned. The total expenditures were \$514,443.47, which was 59 percent of the funds available, and 67 percent of the work that was planned was completed. The employment of 5,000 men was authorized and the average number employed during the period was 4,506. Nearly 98 percent of the funds



FIGURE 11.—C. W. A. workers cutting brown-tail moth webs near Concord, N. H., January 1934.

expended were paid for wages, and employment was given to many men during a portion of the year when no other work was available.

As a result of this work 29,144 miles of roadsides with adjoining farms and home grounds, including a total of 22,836,530 trees, were examined. On these trees 19,954,249 webs were cut and burned, and it is conservatively estimated that these contained more than 1,500,000 caterpillars. A total of 183,364 worthless infested trees were removed and burned, more than half of them being wild cherry and a large portion of the others old apple trees of no commercial value.

### Heaviest Infestation in Maine and New Hampshire

By far the heaviest infestation was found in Maine and New Hampshire, more than 19,000,000 webs having been destroyed in these two States (fig. 11). In Vermont the insect was found in all towns bordering the Connecticut River as far north as Barnet, and it would prob-

ably have been discovered in adjoining territory if the work had been continued longer.

In Massachusetts, owing to the work that has been done annually in the towns, infestation on the whole was not alarming. In some towns there were notable increases in the number of webs found over those reported by the local authorities for the previous year. This condition was due in many cases to a curtailment of the control work during the previous year or two owing to the lack of financial support.

The abnormally cold weather during the winter caused heavy mortality of the small larvae in the webs in some sections of the territory, and thus aided in the reduction in the abundance of the insect. Conditions in the territory in 1934 show remarkable improvement over those of the previous year. There was some injury to foliage during the summer by caterpillars that survived in scattered areas, but it is believed that a comparatively small number of webs have been formed on the trees to carry the species through the winter.

The activities under the C. W. A. project clearly show the benefits that may be obtained by the collection and destruction of webs. The accomplishments also support the belief that intensive work over the infested area with trained personnel, followed by thorough reinspections for several seasons, will eliminate this insect from the United States.

A. F. BURGESS,

*Bureau of Entomology and Plant Quarantine.*

**B**RUSH Fields Treated Before On thousands of acres of old burns  
Planting so as to Insure new crops of trees have never  
Survival of Tree Growth started and conditions give little  
promise of tree growth coming in

naturally. These areas have grown up to brush species which are practically valueless for forage because of impenetrability and low palatability, and are extremely hazardous from a fire standpoint. Once a fire starts in them it is hard to control, and is very likely to burn into valuable adjacent timber. The value of these brush fields in control of erosion depends upon slope and texture of soil.

Ordinary methods have not proved satisfactory in planting such areas. The dense brush hampers the progress of the planters and makes planting difficult. Survival is poor, for the root systems of the brush make almost complete use of plant food and water in the soil, and small mammals which inhabit the brush feed

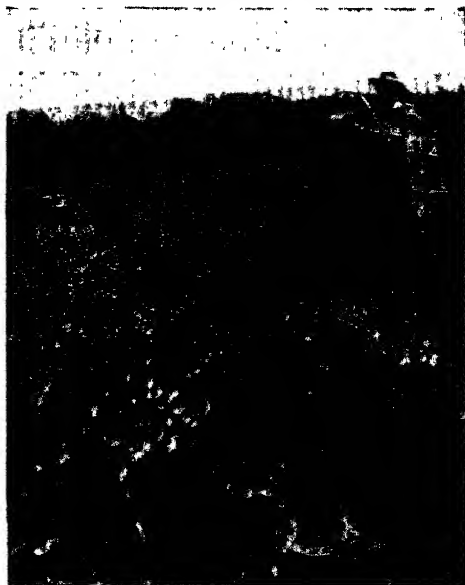


FIGURE 12.—Tractor working a second time through a cleared strip.

voraciously upon the young planted trees. Any treatment that will insure the establishment of tree growth on these brush fields at a reasonable cost is desirable (fig. 12).

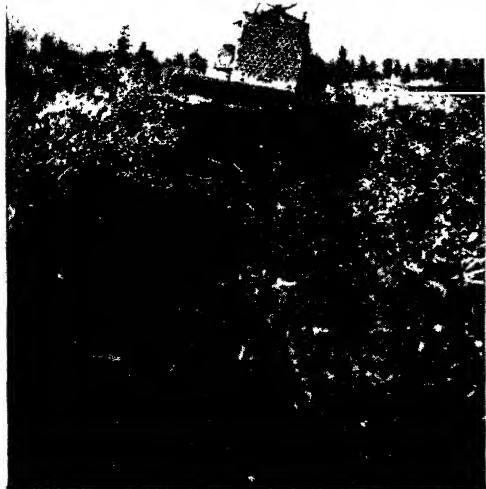


FIGURE 13.—The tractor pushes up a pile of dirt as it completes the clearing of a strip.

During the past few years the need for heavy motor-powered road equipment has developed the tractor trail builder, which has been found practical for preparing brush-field areas for planting. The tractor trail builder consists of a mold-board cutting edge about 8 feet long mounted on the front of a caterpillar-type tractor. This blade can be lifted and lowered by the operator by hydraulic power. The machine will clear strips approximately 6 feet wide through dense brush at the rate of from  $\frac{3}{4}$  to 1 mile per 8-hour shift. In these cleared

strips, trees can be planted by ordinary methods (fig. 13).

### Planting on Cleared Strips

During the past 3 years a few of these cleared strips have been prepared and planted annually in a large brush field on the Lassen National Forest in California. A check plot through which no strips were cleared was also planted. The strips were cleared by lowering the blade of the trail builder so that its cutting edge barely penetrated the surface of the soil. This broke up the root crowns and cut off the brush without pushing too much soil out of the strips. Brush was not cleared between these strips. The width of the uncleared space between cleared strips varied from 20 to 30 feet. Ponderosa pine and Jeffrey pine of the 1-1 age class were planted in these cleared strips and the check plot. The standard 8- by 8-foot spacing was used in planting the check plot. The trees were planted in the center of the cleared strips at intervals of 6 feet. In both cases the open-hole method of planting was used. The total cost of planting in the cleared strips (including strip preparation, planting, and cost of trees) amounted to approximately 6 cents per tree. The total cost of planting in the check plot was approximately  $4\frac{1}{2}$  cents per tree. On a larger scale operation the total cost of planting in cleared strips could be reduced to about 4 cents per tree.

The trees planted in the check plot were a 100-percent loss. Between 75 and 80 percent of the trees planted in the cleared strips are growing. Very little of the brush has started sprout growth in the cleared strips. Rodent damage to the planted trees has been very severe, varying from some nipping to the total cutting off of the top in at least 50 percent of the surviving trees. Practically all damaged

trees, however, are making rapid recovery. Rodent-control measures are being carried on in connection with the current year cleared strip-planting work.

Under the N. R. A. program an allotment was received for preparation of brush fields on a larger scale. Three projects in different localities on the Lassen National Forest were selected, and 500 miles of the 6-foot strips will be cleared and prepared for plating. Eighteen hundred acres of dense brush field will be planted and with fire protection will be reclaimed for timber production.

C. W. CORSON, *Forest Service.*

**CHINCH BUG Campaign Successful in Protecting Corn from First Brood** The chinch bug severely damaged small grains and corn in a number of the Corn Belt States in the summer of 1933, and the unusual abundance of this insect during the summer and fall of that year indicated that even greater injury to susceptible crops could be expected in the spring of 1934. In anticipation of such an outbreak, both State and Federal agencies issued warnings and directions for control and urged the proper planting of crops to avoid severe injury.

As was predicted, a very heavy infestation developed in small grains in the spring of 1934, particularly in Missouri, Illinois, Kansas, and Iowa. In some areas the barley crops were almost completely wiped out. The abundance of these insects in small grains indicated the probability of a heavy migration to corn. The need for control became more urgent in view of the losses due to drought and in order to make yields more certain on the reduced acreage, under the A. A. program.

To provide effective measures for chinch bug control in the extensive area infested, Congress appropriated \$1,000,000 for this purpose, and the funds were made available on June 8, 1934.

The chinch bug has long been one of the most destructive pests in the Corn Belt of plants belonging to the grass family. Its abundance is closely associated with climatic conditions, outbreaks of great intensity usually occurring in periods of drought. The insect itself is small, scarcely one-fourth inch long when adult; but it occurs in such tremendous numbers that it may kill the plants on which it lives by sucking the juices. It hibernates as an adult in bunch grass, wood lots, and other suitable cover, from which it flies to small grains when the weather becomes warm enough in the spring. The eggs are deposited around the bases of the plants of barley, wheat, oats, rye, or similar crops. Under conditions existing last year, the eggs were frequently laid in cracks in the soil around the roots of the plants. Upon hatching, the tiny bugs feed on the small grains, passing through a number of molts, until the grain hardens and matures or is cut. Then, being wingless in this stage, they migrate on foot in search of succulent food plants, the most common of which are corn, sorghum, and Sudan grass, and there complete their development. The bugs generally acquire wings, further distribute themselves over corn and other green susceptible crops, lay eggs, and produce a second generation. This second generation may also cause serious damage.



## Methods of Indirect Control

There are a number of indirect methods of control which may be utilized in fighting this pest, such as destruction of the bugs, by burning or otherwise, in their winter quarters, and the separation of small grains from corn by plantings of nonsusceptible crops, such as alfalfa, soybeans, clover, and various truck crops. There are, however, no known means by which the chinch bugs can be economically controlled in the small grains.

The only method applicable at the time the Federal appropriation became available was the erection of barriers to prevent the migration of the small bugs from the small grains to corn and similar crops. A number of types of barriers are in common use. Sometimes a dust furrow is maintained around the margin of the cornfield, in which a log is continuously dragged at the time of day when the insects are



FIGURE 14.—A creosote barrier against chinch bugs in a Kansas cornfield. The man is standing in the furrow looking into a post hole. The corn in the foreground was completely destroyed previous to the erection of the barrier.

migrating—usually in the forenoon and late in the afternoon. In this way the bugs are killed by crushing and by exposure to the hot sun and dry, heated soil. Dust barriers are occasionally also maintained by going around the field continuously with a harrow. The dust barrier is fairly satisfactory with continuous working except when rainfall permits the insects to cross the dusty area. By far the most satisfactory barrier is a chemical one, constructed by plowing a furrow between the field of small grain and that of corn to which the bugs are migrating, throwing the soil toward the corn, and placing near the top of the furrow on the corn side a line of coal tar or creosote, which the bugs will not cross (fig. 14). At intervals along the furrow post holes are dug, and into these the insects fall, where they may be destroyed with kerosene or calcium cyanide, or by burning. The effectiveness of this method depends upon the erection of the barrier previous to the beginning of the migration. At the time the Federal funds became available, rather extensive migration was already in progress in the central and southern parts of the Corn Belt

and speed was required to construct the barriers in time to save the corn.

### Federal and State Cooperation

The appropriation was made on the basis of a cooperative campaign to be conducted by the Federal Government and the States involved. In conducting this campaign the Government purchased and delivered the creosote used for barriers and provided limited supervision of field activity in cases where this could not be provided by the States, and the States were responsible for local storage, handling, and distribution, and actual application of the materials.

In order to obtain maximum effectiveness from the materials supplied, an extensive organization of State and Federal workers was formed. The activity in each State was under the direction of a chinch bug control committee, representing the State agricultural college, the State department of agriculture, and other interested agricultural agencies. This committee appointed a leader to direct the campaign in the State. The county agents, working under the State leader and his assistants, were responsible for the distribution of the creosote to the farmers according to their requirements. Headquarters for the Federal activity were set up at Minneapolis, Minn.

A total of 6,041,536 gallons of creosote and coal tar was purchased and delivered to the infested States within a month, shipments having been largely completed by the end of June. During the second week in June from 300,000 to 700,000 gallons were shipped per day.

In the following States infestation was severe enough to require extensive control measures: Illinois, Indiana, Iowa, Kansas, Minnesota, Missouri, Nebraska, Ohio, Oklahoma, and Michigan. The most serious and widespread infestations were in Illinois, Missouri, Iowa, and Kansas, and here they were well under way when the appropriation bill was passed. Migration in Ohio, Minnesota, and Michigan began somewhat later because of the later season and the less severe drought in these States.

The results of this campaign in terms of actual saving are difficult to estimate because of the extremely heavy losses from drought in the States affected. Excellent results, however, were obtained in preventing the migration of the first-brood bugs into the cornfields, except in a few cases where the small grains stayed green long enough for the bugs to become mature and to migrate to corn by flight. Approximately 53,184 miles of barriers were maintained, and State workers estimate that they saved at least 1,500,000 acres of corn from destruction. It must be recognized, however, that the barriers are effective only in controlling the first-brood migration to corn and, as indicated above, further spread may result from the flight of the second-brood bugs, which cannot be prevented by barrier construction. It must also be borne in mind that the method of control utilized in this campaign was primarily one of corn protection rather than of chinch-bug destruction, and large populations of insects survived the summer.

The most satisfactory control methods are those indirect means of avoiding infestation by destruction of hibernation quarters and by proper plantings to remove corn from close proximity to infested small grains.

P. N. ANNAND,  
*Bureau of Entomology and Plant Quarantine.*

**CITRUS** Byproduct Uses May Greatly Influence Fresh-Fruit Market

In the statistical section of this Yearbook will be found data showing the production of citrus fruits in the United States. These figures show that production is increasing rapidly. The rate of increase is greater than that of population. This means that the demand must be extended by creating new markets or new uses. Foreign markets are being supplied in part by other recently developed citrus-growing areas such as Palestine, South Africa, and Australia. Canned grapefruit has created a market for itself which can no doubt be extended. Because of its less perishable nature it is better adapted for distant markets than fresh fruit. Why should the citrus industry limit itself to only one product in exploiting these markets?

### Virtually Noncompetitive Uses Available

Some citrus products may enter into competition with fresh fruit while others will have uses so far removed that competition will not be felt. Under citrus products which may compete may be listed canned grapefruit hearts and juice, and canned orange juice. When such products go to new markets or into new uses there is no competition and they may even serve to create a demand for citrus fruits. Many people have learned to eat grapefruit because they tried the canned product and immediately liked its milder flavor. There is a second class of products such as marmalades and beverages which in no way compete with the fresh fruit.

The Citrus Products Station of the Bureau of Chemistry and Soils at Winter Haven, Fla., has succeeded in developing on a laboratory scale a full line of alcoholic citrus beverages such as wines, brandies, and cordials. The wines are prepared by adding corn sugar to increase the sugar content of the juice to about 25 percent, inoculating with a pure culture of wine yeast, and allowing fermentation at a low temperature. The fermentation is followed by clarification and aging. Two distinct types of citrus wine have been prepared, one resembling a sauterne, the other a sherry. Brandies were prepared by distilling fermented sweetened citrus juices. Cordials were prepared by adding sugar, water, and oil from the peel of citrus fruits to citrus brandies. The results of this work point to the possible large-scale utilization of surplus and cull citrus fruits in the manufacture of products not in competition with fresh fruit.

These products are well adapted to large-scale manufacture at relatively low cost and to the utilization of surplus fruit not taken by other uses in that the quantity used in any single year can be adjusted to supply. Excess production of these products in a season of bountiful yield can be carried over to years of low yield with no deterioration but actual improvement in quality.

The preservation of unfermented orange juice by heat has not become of such commercial importance as that of grapefruit juice because of the difficulties encountered in retaining the flavor of the fresh juice. Results obtained during the past 3 years indicate that flash pasteurization following deaeration is well suited for the production of a satisfactory commercial product. The method consists of cutting the fruit in half and extracting the juice from the halved fruit on slowly revolving ribbed cones. Because flavor changes are due primarily to oxidation, the reamed juice is immediately deaerated. This is accomplished

by exposing the juice in thin layers to a vacuum of about 28 inches, thereby removing a considerable quantity of the dissolved gases. Although deaeration is not complete, this treatment has been found highly beneficial. After deaeration, the juice is pumped through the flash pasteurizer, consisting of a coil of tin pipe whose walls are about 2 millimeters apart, and surrounded by a steam jacket. Here the juice is exposed to a temperature not higher than 205° F. for approximately 5 seconds. It is then immediately cooled to 160° and filled into the containers at this temperature. The closed cans are cooled in running water. The process is continuous, and the juice, after being extracted from the fruit, is sealed within the final container in about 5 minutes.

Flash-pasteurized grapefruit juice yields a product superior to that obtained by exhausting and then sterilizing as now generally practiced on a commercial scale.

The criterion of the value of flash pasteurization rests on the stability of the product during periods of storage. It has been found that flash-pasteurized orange juice protected from high storage temperatures will retain an acceptable flavor for at least a year or even longer.

Both the alcoholic and the nonalcoholic types of citrus products have definite and promising commercial possibilities and thus will provide additional returns to the grower.

H. W. VON LOESECKE and H. H. MOTTERN,  
*Bureau of Chemistry and Soils.*

**C**OMMUNITY Values May be Stabilized by Sustained-Yield Forestry The lumber industry in harvesting the virgin timber of the United States has created temporarily thriving industrial centers and prosperous communities. Almost invariably, however, timber cutting on the area economically tributary to any one center has proceeded at such rate that the available supply has been exhausted in one, or at most in two generations. Cutting at a rate many times in excess of the current annual growth has developed a migratory industry.

The "cut-out and get-out" system of harvesting forest resources means liquidation of lumber and logging companies, vanishing pay rolls, dwindling dependent industries, poverty-stricken dependent agriculture, and curtailment of transportation facilities. The community economy breaks down. Tax revenues fail, bonds become default, and social disintegration rapidly develops. Homes are abandoned and the population moves to some undeveloped field. This system of timber exploitation, "wilderness—boom town—ghost town", has been repeated wherever timber production has been an important factor in the industrial life.

It is entirely practicable and possible, however, for communities dependent on forest resources to attain raw-material-resource stability comparable to that enjoyed by agricultural communities close to large centers of population. But permanent stability can only be insured by annually harvesting a forest crop on the area tributary to any one center, equal to the quantity of timber grown on the entire area the same year. The annual growth on the average for the entire area must replace the quantity of timber cut. Sustained-yield forest management has as one major objective the maintenance of permanent

communities by securing an annual production adjusted to annual growth, or the sustained-yield capacity of the land.

### Sustained-Yield Management in Northwest

Natural conditions in the Pacific Northwest are extremely favorable to the sustained-yield management of forest crops. Initial growing stocks are still available in many locations. The annual rate of growth is very rapid and yields per acre are large. The territory required to yield sufficient timber on a sustained-yield basis to maintain a prosperous community unit here is relatively small as compared with other sections of the country. The tree species are aggressive in reestablishing themselves after lumbering, where proper cutting methods are used. Adequate fire protection can be secured at reasonable cost. Douglas fir, the principal tree species, is very resistant to both insect and disease attacks. The simplest form of management can be practiced in most of the territory without impairment of the productive capacity of the soil or decrease of the annual growth rate per acre.

With the exception of a few communities dependent upon national-forest sustained-yield units, practically none of the logging and milling industry of the Pacific Northwest is now on a sustained-yield basis.

The State of Washington ranks first in amount of timber cut, with Oregon second, the combined normal annual cut being about 10½ billion feet. It is estimated that approximately 65 percent of the pay rolls depend on the lumber industry. The indirect contribution in sustaining the railroad and other public facilities, as well as agricultural development, materially increases this amount. The community prosperity in both States is directly related to the lumber cut. A low cut indicates a depression.

On account of the location of large timbered areas within a reasonable rail haul of cheap water transportation, manufacturing facilities are concentrated and are the basis of the prosperity of the larger towns and cities, favorably located with respect to export markets and trans-continental railroads.

Cutting in Washington and Oregon has been largely confined to areas tributary to good transportation facilities, especially to the Puget Sound and Columbia River territory where the quality of the timber is high. The original supply of timber was so large that highly industrialized and stable communities dependent upon this resource were developed. The sawmill industry utilizes chiefly old-growth Douglas fir, spruce, and cedar, and the cutting of stands of mixed species has resulted in a waste of usable material estimated at 2½ billion feet annually. With the exhaustion of this particular class of material, it is generally recognized important changes will occur.

The original stand of privately owned coniferous timber in the Douglas fir area in Washington may be roughly placed at 450 billion feet. The resource survey recently completed by the Forest Service places the remaining quantity of private timber in this State at 123 billion feet, or about 27 percent of the original stand. There is 121 billion feet, in some type of public ownership, State or Federal. It is significant, however, that out of the total of 244 billion feet only 101 billion feet of old-growth Douglas fir, spruce, and cedar is left uncut. With a normal annual cut of some 6 billion feet, it is plain that the supply of material which is the basis for the present sawmill industry is not inexhaustible. The supply of pulp timber

still available is relatively in a much more favorable situation. Since the use of a thousand board feet of timber in the making of pulp and paper products utilizes the services of 5 men as compared with 1 man in the sawmill industry, the development of this phase of the industry may greatly prolong the life of the communities dependent upon forest resources. The possibility for sustained-yield units based on a production of lumber is greatly restricted by the cut-out condition of the original stands.

### Conditions in Oregon

While certain sections of Oregon are in a condition comparable to Washington, there still remain large areas where sustained-yield units can be established. Agricultural lands are favorably located with respect to these forest areas. Some existing communities can be expanded and a permanent ideal combination of industrial and agricultural development attained. In some areas possibly new communities may be required. With approximately 28 percent of the remaining timber stand of the United States located in Oregon, considerable expansion is inevitable there. Each industrial center would include sufficient forest area to furnish the estimated annual supply of forest products. Permanent towns with better living conditions would be justified.

The choice when the vast timber stands of Oregon are exploited on a large scale, will be between a financially sound development which will sustain permanently a considerable population and a relatively high standard of living, or the exploitation of the timber resource on a boom basis with a flush period of prosperity followed by financial and social wreckage.

F. H. BRUNDAGE, *Forest Service.*

**COMPOSTS Are Good Means of Improving Soil of Small Farms** Composts offer a practical means of maintaining the soil fertility which is the most important factor in the successful operation of a subsistence farm.

The subsistence farm is usually small in area, which implies the necessity of having every square foot of it as fertile as possible in order to obtain maximum crops. Where there is an ample labor supply in the family, the preparation of composts and the securing of material for them may well be worked into periods which would not otherwise be fully employed.

There is need here for intensive gardening, and the basis of building up the soil for this purpose is in most cases an adequate supply of humus. Because the area is too small to permit profitable use of green-manure crops, the homestead farmer must rely on manure and composts. As the question of cash involved is also important, it is advisable so far as possible to utilize materials which are at hand or easily secured. In most cases these materials have no cash value, but when properly composted contribute to the building up of the soil and bring increased crop yields.

There are available on practically all farms and gardens many materials which are useful for composts, although the farmer or gardener often fails to appreciate their value. Some of the common materials which are often wasted are leaves, straw, muck, vegetable tops, grass

clippings, and garbage material which is inedible for chickens or pigs. Where stock is kept, the manure from the cows, chickens, and pigs may well be worked into the compost heap, because, unless something of this character is put in, fertilizer chemicals will be needed to break down the compost, and these require an outlay of cash. With this in mind, the treatment of the farm animals may be modified to give greater amounts of material for composts. Larger amounts of bedding than are absolutely required may be used, and the use of superphosphate as a part of the absorbent of the manure is helpful. Superphosphate not only acts as a preservative of the nitrogen in the manure, but also builds up the phosphoric acid content of the mixture, and ultimately that of the compost.

### Methods of Making Composts

There are a number of methods of making composts and the one chosen will depend on the materials available, the location, and the time which can be allowed for the compost to mature. An ordinary pile of leaves without treatment, if kept moist, will ultimately break down into humus, as in the case of forest litter and forest soils. Although this process may take several years in a forest, the breaking down of the compost may be hastened by methods which also improve its character. A small amount of lime added to the compost materials, together with a little manure, will speed up the breaking down of the inert material. The greater the amount of manure which may be put in, the better. If manure is not available, fertilizer chemicals may be added. These may be either a complete fertilizer mixture, high in nitrogen, such as one containing 7 percent nitrogen, 6 percent phosphoric acid, and 5 percent potash, or the separate materials may be added. A mixture recommended by the New York Agricultural Experiment Station at Geneva, N. Y., is sulphate of ammonia, 60 pounds; ground limestone, 50 pounds; superphosphate, 30 pounds; muriate of potash, 25 pounds; total, 165 pounds. This is sufficient to mix with a ton of straw or other waste material.

The straw or organic matter is spread out in 6-inch layers and treated layer by layer with the chemicals until the pile is 4 feet high. Each layer is wet as placed, and finally the pile is kept moist as decomposition occurs. In the warm part of the year decomposition may be thoroughly completed within 3 months. Other satisfactory mixtures are recommended by Missouri, Iowa, and other State experiment stations. Use of the mixtures recommended by the nearest experiment station is advised. In making up a compost pile it is customary to have the pile 5 or 6 feet wide and at least 4 feet high, with the length corresponding to the amount of material available. In this way the ideal condition of allowing the pile to be damp and not wet will usually operate in humid climates. It is not advisable to apply so much moisture that it runs through the pile as this will leach out soluble fertilizer compounds. On the other hand, if the compost is too dry, proper decomposition will not take place. In some cases it has been found convenient to make the compost in a concrete-lined pit or on a concrete floor. Where running water is available in ample amounts, a covered pit may be used effectively, as the moisture can be controlled under these conditions. However, the compost pile may be on the ground without any other protection than proper care in

seeing that the sides are more or less vertical and that the top is depressed in the center to hold the water.

When the compost is thoroughly broken down into a homogeneous mixture, and no undecomposed leaves or other material may be seen, it is ready for use. It may be broadcast and worked into the entire topsoil, if large enough amounts are available. With smaller amounts it is often better to put it in individual hills.

The use of composts will vary somewhat with the soils involved. They are very necessary in sandy soils and are also efficient in improving the mechanical condition of clay soils. On good loams, and on peaty soils, they are not so necessary, though useful. They are a substitute for manure, when manure is not available, and extend the use of manure when small amounts are on hand. In fact, a mixture of manure and compost is almost as good as manure and will cover a much larger area. Composts also save part of the expense of chemical fertilizers and so improve the soil that the fertilizers give more efficient results.

Table 2 gives the analyses of some of the common materials which may be put into composts:

TABLE 2.—Percentage composition of some standard commercial fertilizing materials and other materials

PERCENTAGE COMPOSITION OF VARIOUS FERTILIZING AGENTS

| Material                     | Nitrogen   | Phosphoric acid | Potash    |
|------------------------------|------------|-----------------|-----------|
| Ammonium sulphate            | 19.0-22.0  |                 |           |
| Calcium cyanamid             | 15.5-16.25 |                 |           |
| Nitrate of soda              | 46.0       |                 |           |
| Urea                         |            | 16.0-20.0       |           |
| Superphosphate               |            | 44.0            |           |
| Treble superphosphate        |            | 46.0            |           |
| Ammonium phosphate           | 13.0       | 26.0-35.0       |           |
| Raw ground phosphate rock    | 2.5-4.5    | 20.0-25.0       |           |
| Ground bone (raw)            | 2.5        | 23.0            |           |
| Steamed bone meal            |            |                 | 48.0-52.0 |
| Potassium sulphate           |            |                 | 48.0-60.0 |
| Potassium chloride (muriate) |            |                 |           |

PERCENTAGE COMPOSITION OF VARIOUS MATERIALS

|                                     |         |         |          |
|-------------------------------------|---------|---------|----------|
| Apple leaves                        | 1.0     | 0.15    | 0.35     |
| Apple pomace                        | .20     | .02     | .15      |
| Banana skins (ash)                  |         | 3.25    | 41.76    |
| Cantaloup rinds (ash)               |         | 9.77    | 12.21    |
| Castor bean pomace                  | 5.0-6.0 | 2.0-2.5 | 1.0-1.25 |
| Cattail reed and stems of waterlily | 2.02    | .81     | 3.43     |
| Coal ash (anthracite)               |         | .1- .15 | .1- .15  |
| Coal ash (bituminous)               |         | .4- .5  | .4- .5   |
| Coffee grounds                      | 2.08    | .32     | .28      |
| Corn cob ash                        |         |         | 50.00    |
| Corn (green forage)                 | .30     | .13     | .33      |
| Crabgrass (green)                   | .66     | .19     | .71      |
| Duck manure (fresh)                 | 1.12    | 1.44    | .49      |
| Eggs                                | 2.25    | .40     | .15      |
| Eggshells                           | 1.19    | .38     | .14      |
| Feathers                            | 15.30   |         |          |
| Fish scrap (fresh)                  | 2.0-7.5 | 1.5-6   |          |
| Grapefruit skins (ash)              |         | 3.58    | 30.60    |
| Lemon culls (California)            | .15     | .06     | .26      |
| Oak leaves                          | .60     | .35     | .15      |
| Orange culls                        | .20     | .13     | .21      |
| Peanut shells                       | .80     | .15     | .50      |
| Pest                                | .5-4.00 |         |          |
| Pigeon manure (fresh)               | 4.19    | 2.24    | 1.41     |
| Pigweed, rough                      | .60     | .16     |          |
| Pine needles                        | .46     | .12     | .08      |
| Potatoes, leaves and stalks         | .60     | .15     | .45      |
| Ragweed, great                      | .76     | .26     |          |
| Salt-marsh hay                      | 1.10    | .25     | .76      |
| Sewage sludge from filter beds      | .74     | .33     | .24      |



TABLE 2.—Percentage composition of some standard commercial fertilizing materials and other materials—Continued

## PERCENTAGE COMPOSITION OF VARIOUS MATERIALS—Continued

| Material                                | Nitrogen | Phosphoric acid | Potash |
|---|----------|-----------------|--------|
| Soot from chimney flues.....            | 0.5-11   | 1.05            | 0.35   |
| Stringbean strings and stems (ash)..... |          | 4.99            | 18.03  |
| Sweetpotato skins, boiled (ash).....    |          | 3.29            | 13.89  |
| Tea grounds.....                        | 4.15     | .62             | .40    |
| Tobacco leaves.....                     | 4.00     | .50             | 6.00   |
| Tobacco stalks.....                     | 3.70     | .65             | 4.50   |
| Tobacco stems.....                      | 2.50     | .90             | 7.00   |
| Tomato leaves.....                      | .35      | .10             | .40    |
| Wheat straw.....                        | .50      | .15             | .60    |
| Wood ashes (leached).....               |          | 1.0- 1.5        | 1.0- 3 |
| Wood ashes (unleached).....             |          | 1.0- 2          | 4.0-10 |

## FERTILITY CONSTITUENTS (PERCENT) IN DIFFERENT KINDS OF MANURE

| Kind        | Water | Nitrogen | Phosphoric acid | Potash  |
|-------------|-------|----------|-----------------|---------|
| Sheep.....  | 59.52 | 0.768    | 0.391           | 0.591   |
| Hog.....    | 74.13 | .840     | .390            | .320    |
| Cow.....    | 75.25 | .426     | .290            | .440    |
| Horse.....  | 48.69 | .490     | .260            | .480    |
| Hen.....    | 56.00 | 0.8-2.00 | 0.5-2.00        | 0.8- .9 |
| Rabbit..... | 31.4  | 1.4      | 1.8             | .5      |

The use of composts is one of the safest and most economical methods of building up soil productivity in small areas. This is shown by the fact that their use is world-wide and dates back many centuries. The agriculture of China, in spite of outstanding faults, has been kept going for centuries essentially by the proper use of composts. In almost any location there are materials available for the hauling which make useful soil amendments. This is especially true if the landholder is located near an industrial area or any large city.

C. C. FLETCHER, *Bureau of Chemistry and Soils.*

## COSMETICS Mostly Harmless But Sometimes Not, Tests by United States Chemists Show

Women have used cosmetics since the beginning of time and will continue to do so.

Officials of the Food and Drug Administration have no concern with that. The food and drug enforcement officer does have a real grievance, however, when a tragedy occurs and lasting damage is done by the use of the rare cosmetic which is dangerous and he finds himself accused of callous disregard of human welfare in not having taken proper legal steps under the law to prevent the disaster. His grief, however, is mild compared with that of the victim of the occasionally dangerous article.

The truth, of course, is that there is no national law governing traffic in cosmetics. The present Federal Food and Drugs Act does not deal with these articles. The Food and Drug Administration has had occasion, however, to investigate a number of beauty preparations because they were sold not only as cosmetics; their labeling also bore claims of a medicinal character. When they bear such representations in their labeling, they become drugs within the meaning of the law and are subject to its provisions. The Administration has also had occa-

sion to investigate a number of cosmetics to provide information to a congressional committee which, during the past session of Congress, considered revising the Food and Drugs Act to include cosmetics within its scope. Based upon the results of this investigation the Administration, through the proper official channels, recommended to Congress that the Food and Drugs Act be amended so as to prevent the sale of poisonous cosmetics and to require that claims made in the labeling and advertising of beauty preparations be truthful.

There is no doubt that most cosmetics are harmless. The fact remains, however, that there are on the market some beauty preparations which defeat their purpose by robbing their users of both beauty and health.

### Dangerous Eyelash Color

Lash-Lure is distributed throughout the United States for coloring eyelashes. Soon after its appearance on the market reports of severe injury were published in various medical journals. In Dayton, Ohio, a prominent club woman was made totally blind as a result of a single application by a beauty-parlor operator of this highly poisonous cosmetic. Analysis of the product showed that it contained an aniline dye which is extremely corrosive and capable of burning away the outer coating of the eye. Since the Food and Drugs Act does not prevent the sale of dangerous cosmetics, nothing could be done to stop the sale of the product except to issue press notices calling attention to the danger inherent in the use of this product.

Preparations for the removal of superfluous hair are not ordinarily extremely dangerous. Most of them contain corrosive sulphide salts. These same chemicals are sometimes used in the removal of hair from hides to be tanned. It is a scientific fact that anything corrosive enough to dissolve the hair is quite likely to be strong enough to damage the skin. Many cases of severe injury to the skin frequently followed by infections have been reported to be due to the use of these depilatories.

A more dangerous type of depilatory agent was employed by a New York manufacturer in an article called "Koremku," which sold for \$1.10 a jar. The attractive package was merchandised to people all over the country. It was not until some months after its initial sale that reports of severe injury began to be received. The product contained thallium acetate, a substance well known as a rat poison but for which there is no known antidote. It has the comparatively rare property of being absorbed through the skin. The case of a woman 30 years old who went to the Mayo Clinic, Rochester, Minn., suffering from impaired vision is typical of the ill effects brought about through the use of this cosmetic. She complained of aching and general soreness of all the muscles in her body along with general weakness. Later, other distressing symptoms appeared which kept her in bed about 2 weeks. Finally her aching progressed toward numbness and her eyesight was more seriously impaired. The serious poisonings reported as a result of the use of this product number several hundred. The firm finally discontinued business because of the many damage suits filed against it.

Lead acetate is another dangerous poison sometimes found in cosmetics, more particularly in hair dyes. The application of preparations containing lead may cause local injury to the skin and scalp. Lead is absorbed slowly but tends to accumulate in the system. The

result may be chronic lead poisoning with symptoms such as malnutrition, anemia, painful joints, sore gums, defective vision, and sometimes even more serious symptoms.

Arsenic has been found to be an ingredient of some hair tonics. The dangers of its continued use are too great to make it wise to offer it in cosmetic preparations.

### Mercury Salt in Freckle Creams

Freckle creams and skin bleaches are frequently found to contain a mercury salt. While this substance is entirely capable of lightening the color of the skin, the dangers inherent in its use are great indeed. It may cause acute eruption of the skin. Its continued use over a period of years is entirely capable of producing chronic mercury poisoning, since the skin readily absorbs this substance. The absorbed mercury may damage the kidneys and ulcerate the mouth and gums and cause other serious injury.

In the case of those substances which cause chronic poisoning after prolonged use for a number of years, the person using the cosmetic seldom associates her disease condition with the use of the cosmetic. This is because the injury occurs a long time after she started its use and also because the injury may manifest itself in some entirely different part of the body than that to which the cosmetic was applied.

Fat-reducing preparations are perhaps not ordinarily considered in the category of cosmetics, but since they are consumed so widely for the purpose of improving the personal appearance they can logically be discussed here. The most commonly sold antifat preparations can be classified roughly in three groups. In the first group are those which produce their effect by starvation. In this category fall those preparations which contain nothing but wholesome food substances pleasantly flavored but which usually are sold in small containers for a dollar or more. The directions ordinarily accompanying articles of this sort instruct the user to dispense with breakfast and lunch and replace these meals with a glass of liquid made by dissolving a teaspoonful or so of the product in a glass of water. Obviously if a person decreases the food consumed, a reduction in weight will almost inevitably result.

The second group of fat-reducing products includes those which contain powerful laxative drugs. They may have some limited fat-reducing action by rushing the food through the body so rapidly that it does not have an opportunity to be digested and absorbed. The continued use of purgative drugs is not calculated to improve the health of the user. On the contrary, serious injury may result.

### Thyroid Extract in Some Reducing Drugs

The third group of weight-reducing products includes those which stimulate the fat-burning properties of the body to the point where an actual utilization of the fatty tissue is brought about. Drugs in this class include thyroid extract, and a more recently exploited substance, dinitrophenol. These substances are extremely dangerous and have caused a great deal of serious harm. They should never be used except under the direction of a competent physician who carefully observes their effect.

Since the Federal Food and Drugs Act does not now have jurisdiction over products of this type, dangerous though they may be, all that the Food and Drug Administration can do at present is to warn the public that they are dangerous.

GEORGE P. LARRICK, *Food and Drug Administration.*

**CREDIT Facilities for Agriculture Greatly Improved by New Laws** As a result of the break-down of the usual credit sources and of the intensification of adverse economic conditions, the credit problems of agriculture had become extremely acute even prior to the banking holiday of 1933. To bring about an improvement, a unified and comprehensive Federal credit system for agriculture was put into operation. This brought about a substantial expansion in the lending activities of the Federal land banks and of the Federal intermediate credit banks. Two groups of new lending institutions were established to meet the agricultural needs for production credit and for credit for cooperative associations. Refunding of maturing loans on a long-term amortized basis at lower rates of interest, and efforts devoted to debt conciliation and adjustment, enabled large numbers of farmers to retain farm ownership and to reduce their annual fixed charges for interest.

In the 3-year period prior to the banking holiday the number of farm foreclosures increased at an alarming rate, and forced a sharp reduction in the total of outstanding farm-mortgage loans. The number of forced sales per 1,000 farms, excluding sales for delinquent taxes, increased from 15.7 in the year ending March 15, 1930, to 28.4 in 1932 and 38.8 in 1933. These sales represented not only foreclosures but a large proportion of sales in which the ownership of farms was transferred to creditors for the purpose of escaping the burden of an excessive indebtedness.

These conditions indicated clearly the necessity of more adequate credit facilities to arrest the wave of foreclosures. Legislation, therefore, was enacted which enabled the Federal land banks and the Land Bank Commissioner to make loans for the refinancing of a large volume of the maturing indebtedness and to prevent the unwarranted loss of farms in those cases where the farmer with adequate financial accommodations, and in certain cases with some concessions from his creditors, could work out of his credit difficulties.

#### Advances Under Emergency Farm Mortgage Act

Under the new loan provisions of the Emergency Farm Mortgage Act of 1933, the Federal land banks advanced approximately \$933,000,000 (May 1, 1933, to Feb. 28, 1935) on first farm-mortgage loans. Loans made by the Land Bank Commissioner, about one-half of which are supplementary advances to those made by the land banks, amounted to an additional \$675,000,000, raising the total to \$1,608,000,000. This amount, loaned to approximately 437,000 farmers, has been the means not only of saving farms from foreclosure but has also resulted in refinancing the farmers' indebtedness upon a sounder

long-term basis more in keeping with the debt-paying capacity of the individual farm.

Prior to the passage of the Emergency Farm Mortgage Act of 1933 probably not more than 25 percent of the total farm-mortgage debt was repayable on a long-term amortized basis. A large percentage of the farmers who had short-term mortgage loans falling due during the last few years found it difficult to obtain renewals because of the decline of land values and the generally disorganized economic conditions. Farmers who are refinancing their indebtedness under the new Federal program will hereafter not be confronted with the problem of loan renewals. The expense, as well as the uncertainty, involved in the frequent renewals of short-term mortgages also will be eliminated.

A further advantage of this refinancing program is a reduction in the interest paid by farmers on their mortgage indebtedness. For a 5-year period the interest rate on Federal land bank loans is reduced to  $4\frac{1}{2}$  percent per annum. A survey conducted by the Farm Credit Administration indicates that the average rate of interest paid on the indebtedness refinanced through Federal land bank and Land Bank Commissioner loans has been 6.4 percent. The new basis of financing, therefore, represents an annual saving of approximately one-fourth of the interest charges. The reduction in fixed charges through lower interest payments, together with the reduction in taxes that has taken place, should help materially to put the individual farmer on a stronger financial basis.

In addition to providing for these reductions in interest charges, the Emergency Farm Mortgage Act also made it possible for the Federal land banks to extend delinquent unpaid installments of loans at the request of borrowers during the 5-year period ending July 1938. Up to June 30, 1934, nearly \$50,000,000 of unpaid balances of matured items, consisting mostly of interest and principal of installments and cash advances for taxes, had been extended. The Emergency Farm Mortgage Act also authorized the Federal land banks to defer until July 1938 the principal portion of maturing installments on loans in good standing. To relieve the Federal land banks of any burden from extensions and deferments granted, Congress authorized that extensions and deferments in force may be used by the banks as a basis for paid-in surplus claims from the United States Treasury.

#### Financing by Non-Federal Agencies

The volume of new mortgage loans made by non-Federal agencies has been relatively small and, with the repayment of loans refinanced through the Federal-sponsored agencies, the outstanding volume of loans held by private agencies has continued to decline. As a result of this fact and of the enlarged lending operations of the Federal land banks and the Land Bank Commissioner, the Farm Credit Administration has now become the most important agency holding farm-mortgage loans. As of August 15, 1934, they held approximately 30 percent of the total farm-mortgage debt compared with approximately 20 percent for life-insurance companies, formerly the largest owners of farm-mortgage loans.

Prior to the enactment of the new farm-credit legislation, the facilities available to farmers for short-term and intermediate credit had become seriously disrupted. The banking holiday of 1933 brought to a

culmination a series of bank suspensions which in every year since 1921 had impaired farm-credit facilities. In numerous communities no banking facilities whatsoever existed. In others, existing facilities were curtailed by declining bank deposits or by the desire of banks to maintain their assets in the form of liquid loans and securities purchased outside of their communities.

To fill in these gaps in the credit structure and to provide a stable source of credit for legitimate agricultural-credit requirements, a new system of production-credit associations was established. Farmers now have available in every section of the country a federally sponsored agency that can meet the needs for production credit on the basis of adequate security. More than 600 production-credit associations, covering every agricultural county in the country, have been established. Up to August 31, 1934, these agencies had advanced approximately \$70,000,000 for production-credit purposes.

Nearly half the total was advanced to farmers in the cotton-growing States. Relatively large amounts were advanced to farmers in Maine, New York, Virginia, California, Montana, and Washington. These credit associations have been utilized extensively in areas where the cash outlays required in the production of crops are relatively high. A considerable volume of advances has been made in the cattle- and sheep-growing States, where local banking resources have usually not been sufficient. The volume of livestock loans made by these associations represents, in part, a shift of loans previously held by the regional agricultural credit corporations, which are now in the process of liquidation.

#### Strengthening of Local Banks

The functioning of these credit associations will provide not only a stable source of loanable funds for agricultural-production purposes but will also tend to strengthen the position of local banks in agricultural communities. This will be particularly true where outside funds are required seasonally. Where extensive advances have been made for agricultural-production purposes by local banks, years of low farm income frequently have made it difficult to obtain sufficient repayments of agricultural loans to keep the banks in a liquid condition. Bank resources have become tied up in temporarily slow assets. As a consequence of such adverse conditions, local banks frequently have not been able to meet legitimate demands for production credit.

Where it has been the practice for local banks to borrow extensively from banks in the larger cities and from the Federal Reserve banks to aid in the seasonal financing of agriculture, years of low farm income have made it difficult fully to repay such interbank advances. As a large proportion of the banks' assets were usually pledged as security for such advances, subsequent bank failure frequently left assets of only nominal value to secure depositors' claims. With the utilization of the new farm-credit associations, agricultural-credit needs can be met without putting a severe strain upon local credit resources. The fact that such a source of credit is available probably will make local lending agencies more willing to extend credit. If depositors exert an abnormal demand for deposits, loans made to farmers on a sound basis can be quickly realized upon by having the farmers refinance such loans through production-credit associations. These associations will therefore tend to give to sound agricultural paper a liquidity that has hitherto been lacking.

### Credit for Cooperative Associations

Credit facilities for cooperative marketing associations have been greatly enlarged by setting up in each of the 12 Federal land bank districts a new institution known as a bank for cooperatives. In addition a central bank for cooperatives has been set up in Washington, D. C., to care for the credit requirements of the larger associations and for those associations operating more or less upon a national basis. From June 1, 1933, to March 1, 1935, the 12 district banks for cooperatives loaned \$24,608,000, and the central bank for cooperatives advanced a total sum of \$49,236,000. In part, these banks continue to extend the type of credit that was previously advanced out of the revolving fund of the Federal Farm Board. Lending facilities under the new set-up, however, are greatly enlarged. They now become available to all local cooperative organizations that can meet the requirements. Loans can be obtained either for working capital or to finance capital requirements.

Farm conditions in the last few years have led to the need of a special type of emergency financing, which the Federal Government supplied through crop-production and feed loans. Such loans were provided in 10 different years since 1921. As a result of the establishment of the production-credit associations, which provide a source of credit to those who can supply adequate security, and of the increase of farm income in 1933, the demand for such emergency crop loans was substantially reduced in 1934. The total number of crop-production loans made by the Farm Credit Administration in 1934 amounted to 377,964 (as of July 31) involving a total of \$30,837,944 compared with 633,585 loans in 1933 involving a total of \$57,376,040.

Difficulties which farmers have faced in their credit arrangements have been further ameliorated by various measures taken to encourage the refinancing and readjustment of the debt burden of those farmers who have been faced with the possible loss of their farms. To assist such farmers in obtaining an equitable adjustment of their debt obligations, voluntary conciliation committees have been set up in more than 2,400 agricultural counties. These committees, appointed by State authorities, have mediated between farmers and their creditors. Their objective has been to arrange for the voluntary settlement of debt difficulties, through an extension of the time of payment, a readjustment in the rate or method of payment, or a reduction in the total amount to be paid. Individual farmer's cases, involving over \$200,000,000 of debts, have been handled by these committees. Such efforts have enabled a substantial number of debt-distressed farmers to retain farm ownership.

### Amendment to Bankruptcy Act

The Bankruptcy Act was amended in 1933 to provide for the appointment of Federal conciliation commissioners to assist in bringing about an adjustment or a composition of the indebtedness of farmers who cannot meet their maturing obligations. These provisions have not been extensively utilized, but their existence has been a factor in bringing about voluntary agreements between creditors and debtors. The scope of the provisions was further enlarged in 1934 by an additional amendment providing for the compulsory appointment of a debt conciliation commissioner in each county.

Another amendment to the Bankruptcy Act in 1934 created a greater opportunity for farmers to retain farm ownership, in cases where a debt composition or adjustment has not been obtained through a voluntary conciliation committee or the mediation of a Federal conciliation commissioner. In the past the proportion of financially distressed farmers who have resorted to bankruptcy proceedings has been relatively small. The latest amendment to the Federal Bankruptcy Act may bring about some increase in farmer-bankruptcy cases. Because of other means of debt refinancing and adjustment, however, it is not expected that this increase will be significantly large. The existence of these bankruptcy privileges rather will tend to bring about an equitable readjustment of the farmer's debt obligations upon a voluntary basis, with or without the mediation of local conciliation committees or Federal conciliation commissioners.

NORMAN J. WALL, *Bureau of Agricultural Economics.*

**C**ROP Adjustment Needed to Prevent Return to General Overproduction The drought of 1934 did not really end the farmer's surplus problems. It could easily start them again. We still have a cotton carry-over of 8 million bales when we need only 5 million. We still have stocks of certain types of tobacco three times the normal. The wheat carry-over may be down close to normal by the end of the 1934-35 season, and the number of cattle may be brought close to normal; but the real surplus is not in these figures so quickly brought down by unprecedented drought.

The real surplus is in the acres that are available and which are certain to be put under the plow if no control program exists.

As has happened many times before, the relatively high prices due to drought and the satisfactory returns derived from the A. A. A. programs could lead us into such an expansion in wheat, corn, cotton, and later livestock as to put us in 1936-37 where we were in 1932 if 1935-36 weather were favorable.

More than ever we need a program of balance and restraint. We need to balance the production in the several branches of agriculture through a definite coordinated program. We need also to maintain a proper balance between agriculture and industry.

Capital not being used elsewhere is pressing to be put to use in wheat, corn, cotton, in which uses it would unbalance crops and livestock. Industrial money and unemployed men pressing upon the land easily create a general expansion in farming. Such expansion would call for the reenactment of the A. A. A. were it to pass out of the picture.

#### No Foreign Outlet for Wheat Surplus

In wheat we are not out of the shadow of surplus. Favorable weather for the 1935 crop would give a surplus of 150 million bushels, above the expected carry-over of about 155 million at the end of the 1934-35 crop season. No foreign outlet for this surplus is in sight.

Every year since 1920 we have planted between 60 and 70 million acres in wheat and in every one of these years, except the last two, average yields per acre planted have ranged between 11 to 15 bushels.



We can easily have a crop of 750 to 950 million bushels in 1935 or 1936 out of these possibilities; for without the A. A. A. at least 65 million acres would be planted for wheat to be harvested against 60 million in 1934. The prices that growers received during the past year and the recent trend in prices are more than ample to bring about a cycle of wheat expansion.

Generally it is not recognized that we have had cycles in wheat acreage nearly as pronounced as in cattle numbers. The latter run in cycles of about 14 to 16 years. In wheat we had an acreage peak around 1880, another in 1900, and a third in 1920. Without the A. A. A. we should start on the road to still another peak in wheat production by 1940.

Factors making for a future surplus if the A. A. A. does not exercise guidance are (1) the returns given by the A. A. A.; (2) moneyed people eager to finance wheat production without seeing the end of the road; and (3) the millions of unemployed who will be enticed onto the land.

All of last year's corn acreage plus 10 to 15 million more acres would be planted in 1935 if the Corn Belt went back to individual action without regard to the consequences.

### Difficulty of Using Large Corn Crop

Bearing in mind that the 1934 feed supply and prices, and the A. A. A. program, have greatly reduced the number of hogs and cattle, what would producers do with a good-sized corn crop in 1935? Without the A. A. A. to help them, they would not be able to store the surplus as they were able to do in the past season.

Hence, we would revive the livestock cycle. Low feed prices in 1935-36 would stimulate the production of hogs, cattle, dairy products, as low feed prices have always done. The tugging and pulling between the grain and livestock producers would begin again.

It takes a price of only a little over 10 cents per pound for cotton to start acreage expansion. Under ordinary conditions the 15 to 16 cents which the cotton growers are getting from sales and benefit payments would put 4 to 5 million acres back into cotton. But now that they have reduced acreage for two seasons, twice that amount might be added to 28 million acres planted in 1934, making nearly 40 million acres and a potential addition to the 10-million-bale carry-over to its 1932 magnitude.

Thus farmers must beware of the pressure of the unemployed onto the land and of the flow of unused industrial capital into wheat and corn expansion. These movements tend to cause a new production cycle. Farmers must also have protection against the short-sighted in their own ranks, who judge the future by the unstable present. As much as ever they need insurance against weather conditions through a system of stabilized production supported by the storage of surpluses under loan and seal. The country would thus be assured of a constantly adequate supply of food and clothing materials, and the resulting stability in farm prices and income would contribute to general economic stability. The agricultural adjustment program, soundly carried out, can give that stability, protection, and insurance.

LOUIS H. BEAN, *Agricultural Adjustment Administration.*

**D**AIRY-HERD Improvement Facilitated by Testing Cows Year After Year In dairy herd improvement association work the expression, "continuous testing", means the keeping of yearly production, feed, feed-cost, and income records of each cow in the herd, year after year. The cost of keeping such records is generally about \$3 a year per cow, the cost varying somewhat according to the size of the herd and the pay of the tester. A large percentage of the association members find that it pays well to keep their herds continuously on test.

Dairy herd improvement, through herd-improvement associations, is brought about almost altogether through selection, feeding, and breeding. Records are kept to cover all three purposes. Discontinuance of the work for a single year interferes greatly with selection and feeding and practically blocks the breeding work insofar as the proving of bulls by means of lactation records is concerned. Dairy cows vary greatly in production from year to year due to age, condition, length of lactation, season of freshening, and other causes. For that reason it is not advisable to feed a cow in any one year according to a previous year's production record.

#### Records of Both Milk and Butterfat Needed

On an average, about 20 percent of the cows on test are replaced each year. That means that in a herd of 20 cows there will be about 4 new cows each year on which there are no production records, either of milk or butterfat. Of course, it is possible for the owner to weigh the milk himself and to feed concentrates according to milk production regardless of the butterfat test, but if the milk of these new cows varies in butterfat content from 3 to 5 percent, the feeding of concentrates according to milk weights only is, at best, a very crude procedure.

Suppose the yearly milk production of the new cows in the herd varies all the way from 5,000 to 7,000 pounds. It is easily possible that the cow producing 5,000 pounds of milk may be producing as much or even more butterfat than the cow whose yearly milk production is 7,000 pounds. In such circumstances milk weights alone are unsatisfactory as a guide in feeding or as a basis for selecting the cows to keep and the ones to be discarded.

There are on file in the Bureau of Dairy Industry many stories of new dairy herd-improvement association members who report that the cow they thought was the best turned out to be the poorest producer in the herd. A number of farmers, before they joined a dairy herd-improvement association, were induced to estimate the yearly milk and butterfat production of each cow in their herds. The error of estimate for individual cow records varied all the way from 1 percent to as high as 60 percent, the average error being 25 percent in milk production and 28 percent in butterfat production. Such estimates are not exact enough either for feeding purposes or for the purpose of selection.

#### Continuous Testing Has Numerous Advantages

For the purpose of feeding and selection, testing every other year or every third year is better than not testing at all, but it removes only a part of the guesswork.

Most important of all reasons for continuous testing is the fact that production records of dams and their daughters are compared to prove the breeding value of the sire of the daughters. When dam-and-daughter comparisons are made on the basis of production during the 12 months of the association testing year, the work of proving bulls is much delayed if the testing is not continued year after year and in many cases the bulls cannot be proved at all. And when it comes to proving bulls by comparing the lactation-period records of the dams and daughters, the work will be completely blocked if testing is not continuous. Most of the lactation periods cover parts of 2 years; and if testing is discontinued during one of these years, few if any dairy sires can be proved by lactation-period records, or by means of any kind of records. Since the proving of dairy bulls has, in recent years, become such an important part of the dairy herd-improvement association work, the value of continuous testing cannot be emphasized too strongly.

But some dairyman may say: "I am not interested in proving sires. I think I am doing pretty well when I keep a registered bull to head my herd." Let us consider the records of two registered bulls. One registered bull whose records are on file in the Bureau was mated to 11 cows whose average yearly butterfat production was 466 pounds. The average butterfat production of the 11 daughters, all sired by this registered dairy bull, was 279 pounds. Here was a drop in one generation from 466 pounds of butterfat to 279 pounds. Certainly it paid the owner to discover what the bull was doing in the way of decreasing production before he had done any more damage. Another registered bull of the same breed, but in another herd raised butterfat production from 323 pounds to 508 pounds. This information was also of great value in measuring the improvement due to the use of this registered bull.

Dozens of similar comparisons could be made from the records on file. The sooner such bulls are proved the better. In one case the records showed that the registered bull had already ruined the production of one generation of the herd. The dam-and-daughter records have sealed his doom. In the other case the records have proved the breeding value of an excellent registered bull. Surely no dairyman can afford to take chances when he has so much at stake.

### Wise Use of Records Improves Herds

Not every herd on test shows improvement every year, yet the history of the dairy herd-improvement association work since its beginning has been highly satisfactory. The work began in Newaygo County, Mich., in 1906. The average butterfat production of the cows on test that year was 215 pounds. Every year since then for which summaries have been made has shown an increased production per cow. For the year 1933 the average butterfat production of the cows on test was 313 pounds or 98 pounds more per cow than for the first association the first year. This production per cow is about 90 percent more than the average production of the milk cows of this country. Dairy herd-improvement association work does not result in overproduction of milk and butterfat if testing is accompanied by a close culling out of low and unprofitable producers. Table 3 shows the results that come from an intelligent use of dairy herd-improvement association records.

TABLE 3.—*One herd on test for 3 successive years*

| Year   | Cows   | Milk<br>per cow | Milk<br>price<br>per<br>gallon | Gross<br>income<br>per cow | Cost of<br>feed per<br>cow | Income<br>over<br>cost of<br>feed per<br>cow | Total<br>income<br>over<br>cost of<br>feed for<br>herd | Total<br>feed<br>bill | Total<br>milk<br>pro-<br>duced<br>by herd |
|--------|--------|-----------------|--------------------------------|----------------------------|----------------------------|--|--|-----------------------|---|
|        | Number | Pounds          | Cents                          | Dollars                    | Dollars                    | Dollars                                      | Dollars  | Dollars               | Pounds                                    |
| 1..... | 23     | 4,680           | 0.20                           | 109                        | 96                         | 13   | 299  | 2,208                 | 107,640                                   |
| 2..... | 15     | 6,750           | .20                            | 157                        | 121                        | 36   | 540  | 1,815                 | 101,250                                   |
| 3..... | 11     | 7,359           | .20                            | 171                        | 129                        | 42   | 464  | 1,419                 | 80,949                                    |

Here we have a record of a herd that was on test for 3 successive years. Culling out the low producers had reduced the herd from 23 to 11 cows by the third year. It cost more per cow to feed the 11 cows than the 23 but the total feed bill was \$789 less. By milking fewer but better cows in the third year the owner not only placed 26,691 pounds less milk on the market, but increased the total income over cost of feed from the herd by \$165. It not only paid the owner of this herd to test continuously but it paid him big returns to study the individual records of his cows.

On January 1, 1934, there were 793 dairy herd-improvement associations in active operation. Doubtless these would nearly all die out in a short time if the testing of the herds were not continuous. As a rule, the owners of the poorest herds are the most likely to drop out of the association. Yet they are the ones that need it most. The wisest members continue year after year, because they have found that continuous testing pays.

J. C. McDOWELL, *Bureau of Dairy Industry.*

## DEPLETED Ground Water May be Replenished by Artificial Spreading

It is a noteworthy fact that during the serious droughts and resultant crop losses of recent years the areas that depended wholly or in part on irrigation suffered relatively little in comparison with the drought-stricken regions generally. Indeed, only in extremely limited irrigation sections has any distress resulting from crop failures been felt by the farmers. Most irrigated crops have matured before there was any material shortage of water. This condition was especially marked in districts getting their irrigation supplies from underground sources. Practically all of such areas have come through the drought periods with little or no loss resulting from crop failures.

Naturally, however, the current series of years of low precipitation has been accompanied by an overdraft of surface-reservoir storage supplies and by a corresponding depletion of underground supplies. Furthermore, during the same period there has been a notable increase in the extent of irrigated agricultural areas served by underground water. Consequently, these two factors—decreased natural recharging and increased draft of the supply—occurring simultaneously, have tended to create a serious menace against future assurance of dependability on underground storage.

A survey of areas where water is pumped from underground supplies as the principal source for irrigation use shows a generally constant lowering of the surface of the water table. The situation is naturally

more serious in some localities than in others since some underground storage reservoirs are larger, and consequently are depleted more slowly than others; and, on the other hand, some have less favorable recharging possibilities and consequently respond more slowly to recharging either natural or artificial.

It seems certain that in any area dependent upon pumped water for either domestic, irrigation, or industrial use the recharging of the underground supply can be stimulated by artificial methods. This has been found to be true in areas that have been studied in Arizona, California, Oregon, Texas, Utah, and Washington.

There are several different methods that may be employed in effecting replenishment of ground-water supplies. In this connection it should be noted that one of the most important sources of loss of surface-water supplies lies in the seepage that takes place, sometimes very rapidly, during the conveyance and storage stages, and in deep percolation of much of the irrigation water applied to cropped lands. This loss, however, while decreasing the gravity supply, constitutes a material factor in the recharging of the ground-water supply. Similar replenishment may be effected artificially by fall and winter irrigation, involving the use of the canals practically throughout the entire year, by diverting small streams from their natural channels and "spreading" the water over absorptive areas, or by utilizing shafts and wells sunk to suitable gravel deposits. Local conditions and legal requirements must, of course, be complied with, and precautions against the washing or leaching away of soil fertility should always be taken, whatever the method employed.

Southern California furnishes the best examples of well-developed spreading systems. In that locality the recent years of subnormal precipitation have naturally been associated with an accumulated drop in the major ground-water levels, which had already become seriously lowered. Consequently, the State, the counties and other political subdivisions, and even conservation associations have been aided by the Federal Government in extending several hundredfold the works and facilities for conserving and spreading the flood waters discharged by streams of intermittent flow.

On the Santa Ana and Lytle Creek cones, several hundred miles of spreading canals, large and small, have been built in highly porous materials. On Cucamonga, Devils, and San Antonio Creeks retention dams and basins have been provided and extensive systems of canals have been constructed over absorptive areas.

During this period of development the United States Department of Agriculture, through its Bureau of Agricultural Engineering, has been cooperating with the local more directly interested agencies in developing research data concerning rates of percolation in different types of soil surface, the relative advantages and disadvantages of various spreading systems, the differences in percolation factors of areas denuded of vegetation and those of areas still bearing their native growths, the effects of fluctuating water tables, and other important factors.

Water spreading is no longer an experiment; under suitable geologic, topographic, and water-supply conditions it often is the most profitable investment in water conservation that a community can make.

A. T. MITCHELSON, *Bureau of Agricultural Engineering.*

**D**OWNY Mildew of Hops Hops have been grown in many States, but the crop has for years been localized in sections of Oregon, California, and Washington (fig. 15). In 1890 approximately one-half of the 40,000,000 pounds

produced in the United States came from New York. Thereafter the production in that State declined steadily, and since 1920 it has been commercially unimportant. About 32,000 acres of hops were grown in the Pacific Coast States in 1934, the production amounting to approximately 35,000,000 pounds with an estimated value of about \$10,000,000.

Growers have many problems in connection with the growing and marketing of this crop. At present the most important of these concern (1) the quality of hops produced and their comparison with those of foreign production, and (2) the control of the very serious disease known as downy mildew, which often causes heavy losses.

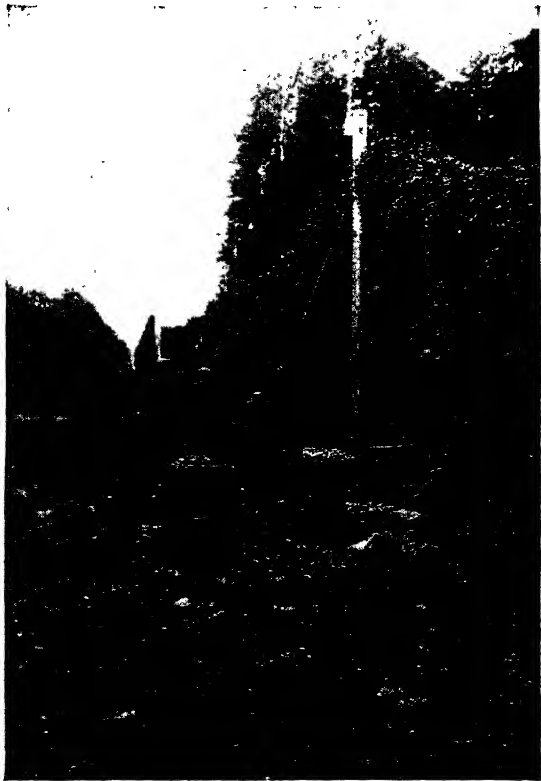


FIGURE 15.—Typical view of a hop field in Oregon at harvest time.

### Studies on Quality of Hops

Hops impart to beer a characteristic flavor and bitterness, depending largely on the quantity of certain constituents present in the hops, of which the resins are of special importance. The soft resins impart the desired flavor to beer, the hard resins having practically no brewing value. It is important, therefore, that all commercial practices be conducted, so far as possible, with a view toward maintaining the quantity and quality of the soft resins. Any progress made in this direction by the growers and those who subsequently handle and store the hops should permit the industry to meet more effectively the competition of foreign hops.

To encourage concerted efforts and to provide the necessary background of information the Bureau of Plant Industry, through its Divi-

sion of Drug and Related Plants and in cooperation with growers and dealers, has undertaken an investigation of the various practices involved, to determine the relationship of prevailing methods to the quality of hops and to recommend practicable modifications likely to result in a more uniform and better quality. Attention is given to the influence of fertilizers, stage of picking, methods of drying and baling, and conditions of storage, as determined by chemical analysis of the hops produced under various controlled conditions.

### Studies on the Downy Mildew

Downy mildew is a fungus disease that has been prevalent in European hop fields since 1920. In this country it was observed on wild hops in Wisconsin as early as 1909. In 1928 it appeared on cultivated



FIGURE 16.—Effect of downy mildew on new growth of the hop plant. At the right, normal young vines; at the left, typical "spikes" caused by the disease.

hops in New York and in British Columbia, where a severe outbreak occurred. It was not recognized in Washington until the following year, but in 1930 it appeared in many of the fields in both Washington and Oregon and since then has been the most serious problem of the growers in both States. In the spring of 1934 the first outbreak occurred in California, where it appeared in the coast counties. The spread of the disease and its virulence depend on climatic conditions; cool, humid weather favoring its development. In the Sacramento Valley in California and in the Yakima district in Washington, where hot, dry weather generally prevails during the growing season, the disease may not become established or do serious damage, but in the other hop-growing districts vigorous control measures must be adopted to avoid excessive losses.

The disease attacks all the aboveground parts of the hop plant. It is characterized by two types of spores: (1) Conidia or summer spores,

which are capable of spreading the disease at an alarming rate during the growing season if conditions are favorable for the disease, and (2) oospores or winter spores, which are thought to be the chief means of carrying the disease over from year to year. Most of the damage is caused by the effects of the disease on the young vines that develop from the crowns in the spring. These are stunted, causing the so-called "spikes", which prevent the vines from producing a crop (fig. 16). Under favorable conditions the disease also attacks the hop cones in the late summer and causes a direct loss by lowering the quality of the product. Entire fields are in some cases destroyed, while in others the damage is frequently sufficient to deprive the grower of all profit from his crop.

### Problem Approached in Two Ways

In 1930 the Bureau of Plant Industry in cooperation with the Oregon Agricultural College undertook an investigation of the disease to assist growers in combating its effects. The problem was approached in two ways: (1) To provide practical control measures in the hop fields, and (2) to develop new varieties resistant to the disease. The first includes studies of the behavior of the disease, its propagation, and the conditions that determine its spread and virulence, also the formulation of methods of control by means of sprays and dusts and of practical cultural methods that minimize its spread. Information of this kind is constantly being brought to the attention of growers in order to provide immediate assistance. The second line of investigation cannot give immediate practical results but seeks rather to provide new commercially useful varieties partly or fully resistant to the disease to replace in the future those now grown and which are especially subject to attack.

A. F. SIEVERS and FRANK RABAK,  
*Bureau of Plant Industry.*

**D**RIED Skim Milk Added to Other Foods Improves Their Nutritive Value The manufacture of dried skim milk is one of the more recent developments of the dairy industry. The past 15 years have been marked by a steady increase in the utilization of and demand for this product, and today it is manufactured to some extent in practically every State. Production has increased steadily from 41,893,000 pounds in 1920 to 288,114,000 pounds in 1933.

### Process of Manufacture

To produce a dried skim milk of excellent quality only the best quality of skim milk can be used. Nothing is added to the skim milk prior to its desiccation, hence the product contains only the solids not fat, plus some milk fat and moisture, and the yield is about 8½ to 9 pounds of dried product per 100 pounds of skim milk.

One of the following processes is usually used in its manufacture.

Atmospheric roller process: Steam-heated drums are so arranged that partially condensed skim milk is spread in a thin layer on their outer surface. During the revolution of the drum the adhering film



of milk dries and is then scraped off. This dry film is reduced to a powder by revolving brushes or other grinding devices.

**Vacuum drum process:** This is really the roller process with the roller or drum enclosed in a chamber which is maintained at a partial vacuum during the drying operation, thus making it possible to dry skim milks at temperatures below their respective normal boiling points.

**Spray process:** The fluid skim milk, sometimes partially condensed, is sprayed into a current of heated air which removes the water and leaves the milk solids as a finely divided powder. Various devices are used to separate the powder from the moist air.

**Flake process:** Partially condensed whipped skim milk is spread on a wire belt which passes through a heated chamber wherein currents of hot air are directed against it. The dried product is removed from the belt in the form of flakes.

### Nutritive Value of Dried Skim Milk

The approximate percentage composition of dried skim milk is as follows: Proteins 38, lactose 50, salts 8, fat 1, and moisture 3 percent, and it represents an energy value of over 1,800 calories per pound, which is greater than that of most foodstuffs, calculated on a similar basis.

An analysis of average whole milk indicates that the ratio of proteins to fat is approximately 1:1.08, while the ratio of sugar to fat is approximately 5:3.8. The relative biological caloric value of the constituents as foods would be as shown in table 7.

TABLE 7.—*Relative total caloric value of constituents in fluid whole milk*

|                      | Parts per<br>100 parts<br>milk | Heat of<br>combustion<br>calories per<br>gram | Relative<br>total cal-<br>oric value | Approxi-<br>mate per-<br>centage of<br>total |
|----------------------|--------------------------------|---|--------------------------------------|--|
| Fat.....             | 3.8                            | 9   | 34.2                                 | 50+  |
| Protein.....         | 3.5                            | 4   | 14.0                                 | } 50—  |
| Sugar (lactose)..... | 5.0                            | 4   | 20.0                                 |  |
| Salts.....           | .7                             |   |                                      |  |

These figures indicate that approximately one-half of the energy value of milk is contained in the solids not fat, or the skim milk.

Energy values alone, however, do not indicate the total value of the skim-milk solids. Foods are needed not only because they furnish energy but also because they furnish material with which tissues are repaired and new tissues are formed. The salts of milk which are found largely in the skim milk are especially valuable food constituents in this respect. Their readily assimilable calcium and phosphorous compounds furnish mineral constituents essential to development and proper growth. The proteins are readily digestible and assimilable and are more nutritive than those of most foodstuffs. The lactose, in addition to having a high caloric value, is especially beneficial in regulating the intestinal flora and seems also to be superior to other carbohydrates in some respects for the growth of young animals. Skim milk is an especially valuable human food also because of its vitamin G (B<sub>2</sub>) content, and should, therefore, be a constituent

of the diet of all people in regions where pellagra is of frequent occurrence. It may also contain traces of vitamin D and even vitamin C.

From a consideration of the research work to date on the vitamin content of dried skim milk, it may be said that the approved processes of drying now used do not expose the product to high enough temperatures for a sufficient period of time to materially affect any of the vitamins except the antiscorbutic vitamin C. This vitamin is abundant in most vegetables and citrus fruits, which should be a part of every diet whether the milk used be a liquid or dried product. In the feeding of infants and children a milk diet should also be supplemented with sources of vitamin D, such as cod-liver oil and egg yolk, and the individuals should be subjected to direct sunlight frequently.

### Uses of Dried Skim Milk

The almost completely digestible and assimilable milk proteins and the readily metabolizable calcium and phosphorous compounds in dried skim milk, make it especially valuable as a constituent of the diets of children and adults, and of the feed of growing animals.

The most convenient method of supplementing the diet with milk solids not fat is that of adding dried skim milk to foods in daily use. A few of them are breads and cakes, biscuits and crackers, ice cream, candy, chocolate drinks, sausages, meat loaf, custards, puddings, sauces, gravies, etc. Often the dried skim milk improves the texture, appearance, and flavor of the product in addition to enhancing the nutritive value.

For the same reasons that skim milk is one of the most valuable of human foods, it is also one of the best foods for other animals and for fowls. This fact has been appreciated by the most successful raisers of calves, chickens, dogs, goats, foxes, etc. Work at the Minnesota Agricultural Experiment Station has shown that with the gradual decrease of the quantity of whole milk fed to a calf during the first 14 days, skim milk should be added to the feed in increasing amounts up to the sixtieth day. The value of this method of feeding has been confirmed by work at other stations, and dried skim milk has been found to be a convenient form of skim milk to use as a grain supplement in these cases.

Incorporation of liberal quantities of dried skim milk into the diet of growing chicks has been reported to be effective in protecting them against coccidiosis. Workers at the California Agricultural Experiment Station recommend the use of dried skim milk in their feeds to the extent of 40 percent of the weight of the dry materials. Other workers at the Wisconsin and New York (Cornell) stations also recommend the liberal use of dried skim milk in the feeds of chickens.

Most of the dried skim milk produced at present is used in the manufacture of bread and ice cream. Considerable quantities of the lower grades of the product and some of the better grades are used in poultry and animal feeds. Dried skim milk insures a ready source of skim milk solids of uniformly good quality, is economical in handling and storing, and is convenient to use. These advantages have been recognized by the industries mentioned and are also being recognized by farmers in many localities, who maintain a supply of the product for use in the feeds of their farm animals. Smaller units of trade, i. e.,

hotels, clubs, etc., also are aware of the many advantages of the product. This is especially true in the areas of low milk production.

### Handling and Storing

With the increased manufacture and greater use of this product has come the need for more convenient methods of handling it, especially in smaller lots.

Dried skim milk should be maintained at a low moisture content throughout the period of its use in order to prevent spoilage. Because of its avidity for moisture, moistureproof containers are the only assurance against these changes. For the trades wherein large quantities are used the product is usually packed in specially constructed barrels. With greater general use of the product by the smaller manufacturers, and in the household where consumption is limited, a need has arisen for moistureproof cartons or packages which will facilitate the distribution of small quantities to the retail trade.

The laboratories of the Bureau of Dairy Industry have found that bags of bond paper containing a laminated glassine inner liner, or well-constructed and waxed paper cartons, will exclude moisture over long periods even in a relatively humid atmosphere and can, therefore, be used in the retailing of this product in small lots. Further research work along this line will undoubtedly result in the disclosure or development of other types of containers that can be used for this purpose and should aid materially in the greater distribution and use of dried skim milk.

GEORGE E. HOLM, *Bureau of Dairy Industry.*

**D**UTCH Elm Disease Must be Eradicated to Save American Elm

Wide-spread destruction faces the American elm through the spread of the Dutch elm disease, caused by a deadly fungous parasite introduced from Europe. The presence of this disease in the vicinity of New York Harbor was discovered in June 1933, but subsequent observations indicate that it may have become established there as early as 1929. It is now known to have invaded an area of approximately 2,500 square miles in New Jersey, New York, and Connecticut, within a 40- to 50-mile radius of New York City. By October 1934 more than 7,500 diseased trees had been located in this center of infection. Presumably many more are diseased but had not at that time developed characteristic external symptoms.

In practically all the States east of the Rocky Mountains the American and other species of elm constitute an irreplaceable public asset. In the Northeastern States particularly the American elm is the characteristic shade tree along streets and about dwelling houses. As such, this species has an economic value that runs into many millions of dollars. The enhanced value of real estate due to the presence of elm shade trees in many parts of the United States may hinge on the success of the campaign against this disease in the restricted area at present infected.<sup>1</sup>

<sup>1</sup> After this article was written the Public Works Administration on the recommendation of the Department allotted \$677,000 for combating the Dutch elm disease. Owing to a provision made by Congress, that the regular appropriation will be reduced by an amount equal to any amount that may be allotted for this purpose from Federal emergency appropriations, the amount actually available for combating the Dutch elm disease, including the location and removal of potentially diseased and dying elm trees, is \$527,000. Work under this allotment was started early in 1935.

Observations of the effect of the Dutch elm disease in Europe, as well as in the infected area around New York City, indicate that this disease is capable of wiping out all our native species of elms. There is no known cure for the Dutch elm disease. The only present hope of preserving our elm plantings rests on the eradication of the disease from this country, which present information on the means of its spread indicates may be possible. The accomplishment of this task necessitates immediate action to check the spread of the disease while it is confined to a comparatively small area, and the cost of destroying infected trees is not prohibitive. Another year's delay will dissipate the only chance of saving the elms, or at least will multiply the cost of an adequate eradication program in the future.

### Caused by Parasitic Fungus

The Dutch elm disease is caused by the parasitic fungus *Ceratostomella ulmi* (Schwarz) Buisman, which lives and develops in the sapwood of elms. The presence of this parasite in a tree results in the growth of obstructions in water-conducting vessels, first of the branch originally attacked and eventually of the entire tree.

The first external symptom of the disease is the wilting or dying of the foliage of the infected twig or branch, and this may occur as early as 10 days after the part is attacked. Apparently, however, these symptoms may not be in evidence for some time. Field observations in 1934 indicate that the disease does not usually enter a large proportion of the water-conducting vessels of the tree until the spring following infection. Early in the spring the American elm develops a new ring of such vessels. The fungus may cross into this new zone of vessels and may spread with great rapidity to all its parts in the roots as well as in the aerial portions of the tree. The foliage wilts and dies, and finally either the entire tree dies or there may be a temporary recovery as scattered new vessels laid down in the summer wood permit partial circulation of water.

Soon after an elm branch or tree begins to die, it may be invaded for breeding purposes by bark beetles and other wood-boring insects. One of these bark beetles, *Scolytus multistriatus* Marsh., is of European origin, but was reported in the United States as early as 1909. This beetle has been found at various points from northeastern Massachusetts to southeastern Pennsylvania, and it is well established in most of the infected areas in New York, New Jersey, and Connecticut. This bark beetle has been demonstrated to be an important agent in the spread of the Dutch elm disease in this country. When adults emerge from the bark of a diseased elm, they may carry viable fragments or spores of the fungus in or on their bodies. These adults fly to young twigs of elm, and in feeding on the succulent tissues, especially in the crotches of such twigs, they may inoculate healthy elms with the fungus. As these trees wilt and begin to die, they in turn are entered by bark beetles seeking to establish new broods. Thus the cycle continues, with rapid multiplication of both the beetle population and the number of diseased trees.

### Symptoms Favor Eradication of the Disease

Fortunately, the relation of fungus development to beetle infestation is such as to favor eradication of the disease. Bark beetles do not start to breed in a diseased elm until the affected part is so weakened

as to show external symptoms. Then 50 to 60 days elapse before the new adults mature, emerge, and spread the disease to other elms. Therefore, by systematically inspecting all elm trees within and near the infected area once a month during the foliage season, when the beetle is active and disease symptoms are readily apparent, and thoroughly destroying all diseased trees as soon as they are found, it appears practicable to prevent the escape of this disease carrier from every infected tree. Once the spread of the disease has been halted, continuation, for a number of years, of systematic inspection of the infected area and prompt destruction of trees in which belated symptoms appear should result in complete elimination of the disease.

Eighteen elms attacked by the Dutch elm disease have been found outside of the main area of infection in the vicinity of New York City. A single diseased tree was discovered in Cincinnati, Ohio, in 1930. In the same year 3 infected trees were found in Cleveland, Ohio, and additional infected trees have since been discovered, 4 in 1931, 1 in 1933, and 2 in 1934. One infected tree was found in Baltimore, Md., in 1933. New isolated infections in 1934 comprise 1 tree in Old Lyme, Conn., 1 tree at Norfolk, Va., and 4 trees in Indianapolis, Ind.

All these isolated infected trees, except the one near Old Lyme, Conn., are definitely associated with known shipments of burl elm logs from Europe. Such logs are recognized as the means of entry of the Dutch elm disease into the United States. Present information indicates that the infected tree near Old Lyme resulted from the movement of domestic diseased material. There is no indication that any of these spot infections have become centers of spread, evidently because of the absence of the European elm bark beetle from these localities and because the diseased trees were immediately destroyed.

Following the finding of a diseased elm in Maplewood, N. J., in June 1933, extensive scouting was carried on in New Jersey, New York, Connecticut, and neighboring States in an attempt to define the limits of the infected area. During the winter and early in the spring of 1934 scouting for diseased trees and their destruction were continued by various recovery agencies. In May and June the rapid development of serious symptoms in elms infected in 1933 or in previous years necessitated a sharp upward revision of the estimated number of trees affected. The total number of diseased trees that had been found by October 24, 1934, in this infection center had reached 7,557, of which 5,032 were in New Jersey, 2,470 in New York, and 55 in Connecticut. All but approximately 1,450 of these trees had been removed by this date.<sup>2</sup> One systematic examination of the entire area known to be infected, plus a survey of a safety border arbitrarily established 10 miles beyond the outlying infections found, was completed. A large part of this area was examined a second time, and a relatively small portion was examined three times at intervals of approximately 1 month.

Because at least one winter is required for the majority of infected trees to develop marked external symptoms, at no time does current information based on these symptoms necessarily represent the current status of the disease. Figure 17 represents the principal infected area and the number of diseased elms as known on October 24, 1934,

<sup>2</sup> Diseased trees found in this infection center up to Apr. 6, 1935, totaled 7,773, of which 5,134 were in New Jersey, 2,583 in New York, and 56 in Connecticut. Only 6 known diseased trees remained standing.

after the completion of the first systematic examination of the known infected area and its environs.

### Dead and Dying Trees May Harbor Infection

In addition to the known diseased trees still standing, there is in the work area a large accumulation of dead and dying elms, many of which may be harboring the disease. Elimination of these deca-

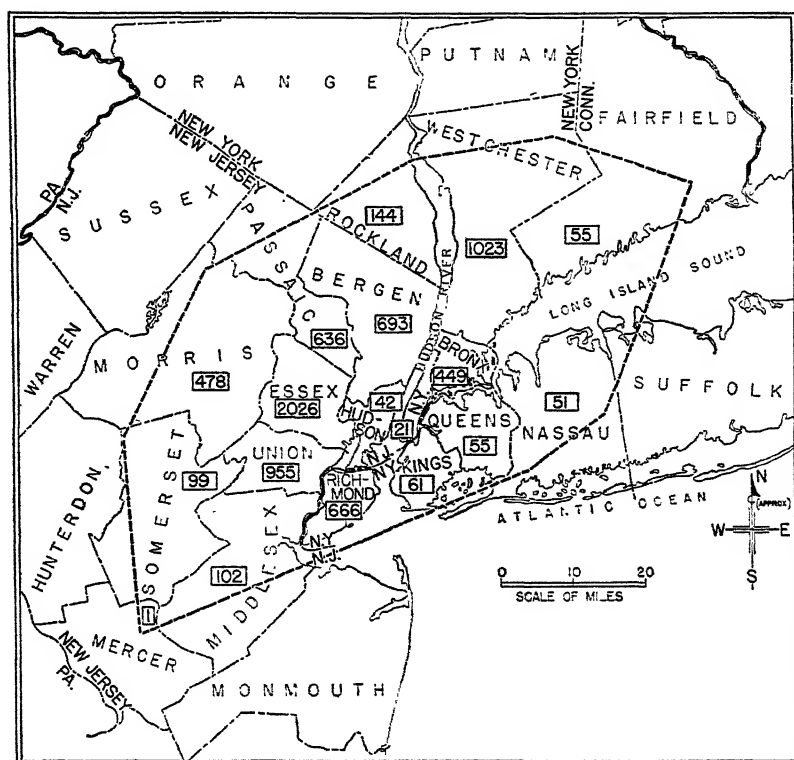


FIGURE 17.—The extent of the principal area known to be invaded by the Dutch elm disease, and the total number of diseased elms confirmed in each county, as of October 24, 1934.

dent and dead elms is essential to the success of the disease-eradication program. The completion of this clean-up work before the spring of 1935 will permit concentration of location and eradication activities in 1935 on the new crop of dying elms.

The increased knowledge of the Dutch elm disease situation gained during 1934 has furnished a sounder basis for optimism with respect to the ultimate eradication of the disease. However, it is recognized that only a thorough, long-term program of adequate proportions can preserve for the future the stately beauty of this unsurpassed shade tree, the American elm.

L. H. WORTHLEY,  
*Bureau of Entomology and Plant Quarantine.*

# EGG Hatchability Is Increased by Frequent Turning in Incubator

The hatchability of fertile eggs may be increased by frequent regular turning during the first 2 weeks of incubation, recent investigations indicate. Eggs in large incubators are usually turned mechanically, a half turn in one direction at one turning, then a half turn in the other direction at the next. Eggs in small incubators are usually turned by hand, the



FIGURE 18.—Twisted albumen of an egg that was turned always in the same direction during incubation.

direction of successive turnings depending on the operator. The usual number of turnings a day is from 1 to 3. Recent data obtained at the United States Animal Husbandry Experiment Station at Beltsville, Md., indicate that eggs turned mechanically at 15-minute intervals, about a half turn in one direction at one turning and an equal distance in the opposite direction at the next turning, hatched 7 percent better than eggs turned 3 times a day by hand. Both lots of eggs were of the same general origin and were in the same incubator at the same time. Still another investigation indicated that eggs turned

at least 8 times a day, at 3-hour intervals night and day, will hatch better than eggs turned less frequently.

The manner and frequency of turning the eggs in the experiments at Beltsville were patterned after the procedure followed by the setting hen. She turns her eggs once every 15 minutes, on the average, in one direction at one turning, back at another, not over and over in the same direction.

Eggs turned always in the same direction, at 15-minute intervals from the beginning of incubation, usually fail to hatch. In many cases, the thick strands of egg white at each end of the yolk, the chalazae, become twisted so tightly (fig. 18) that the yolk is ruptured during the first week of incubation. Even when the embryos live to the second week of incubation, the membranes through which they breathe and also obtain lime from the shell seldom adhere properly to the shell membrane.

### The Proper Position of Eggs in Incubators

Hatchability may be increased also by maintaining the proper position of the eggs in the incubator. The position of the egg partly determines the position of the chick in the egg at hatching time. Between the third and fifteenth days of incubation the operator should not allow the small end of the egg to be above the large end for a long period, because such a position is likely to result in the chick's head being in the small end of the egg at hatching time. Such a chick has only about half as much chance of hatching as a chick in the normal hatching position with its head in the large end of the egg.

The turning and position of the eggs are most important during the first 2 weeks of incubation. The position of the chick within the egg is less affected by outside influences after the fifteenth day of incubation than before. Voluntary movements of the chick in response to gravity, mechanical shock, suffocation, or other cause probably result in some shift in position. Though it is certain that the effects of turning and egg position are relatively slight during the third week of incubation, the standard recommendation that eggs be kept in proper position and turned regularly to the eighteenth day of incubation should be followed until sufficient evidence is produced to indicate that even a slight improvement in hatchability may be obtained by some other method.

T. C. BYERLY, *Bureau of Animal Industry.*

**E**GG Yield of Chickens Is Affected by Content of Vitamin D in Diet To obtain good egg production it is not enough to give chickens all the feed they will eat. Unless their diet is carefully compounded, so that it contains an adequate quantity of all the necessary nutrients and accessory food factors, they will not lay all the eggs they are capable of producing.

A deficiency of vitamin D in the diet has a detrimental effect on the production of eggs and also decreases the strength and thickness of shells and the vitamin D content of yolks. If, in the case of pullets, the feed contains an inadequate supply of this accessory food factor, skeletal development is delayed. The net result is that the time



required to reach full production is increased and an unnecessarily large number of small eggs is obtained. In the case of both pullets and hens, the ability of their eggs to hatch is materially decreased, if a diet containing an inadequate supply of vitamin D is fed.

### Sources of Vitamin D

It is fortunate, therefore, that vitamin D is very easily supplied to laying chickens. Among the practical means of supplying this vitamin are sunshine, cod-liver oil, sardine oil, some of the other fish oils, and cod-liver meal. Ultraviolet irradiation of the chickens, or the use of irradiated yeast and solutions of irradiated ergosterol may be resorted to, but at present these methods of supplying vitamin D are either unsatisfactory or not economical. It is probable, however, that, in the near future, satisfactory irradiated products will be produced cheaply enough to make their use economical.

The cheapest source of this highly important vitamin is sunshine; but in many parts of the country during late fall, winter, and early spring, it is not possible for the chickens to get enough sunlight to supply all the vitamin D required. At such times it is necessary to have a more dependable source, such as cod-liver oil or sardine oil.

Inasmuch as not all cod-liver oils, sardine oils, and other fish oils containing vitamin D have the same potency, it is necessary that only products of guaranteed vitamin D content be used. A good cod-liver oil will contain 2,400 or more international vitamin D units per ounce, or 85 or more international vitamin D units per gram. Dependence should not be placed on cod-liver meal, unless its potency is definitely known.

Experiments on the vitamin D requirements of laying chickens in full production indicate that each bird should receive between 70 and 80 international vitamin D units per day. In other words, to meet this requirement, each ounce of feed consumed would have to supply at least 20 of these units.

### Requirements Vary With Season

If the all-mash system of feeding is used, and the chickens are kept in strict confinement without access to sunlight, 1 pound of good cod-liver oil per 100 pounds of feed mixture will ordinarily supply enough vitamin D. If the mash-and-scratch system of feeding is employed, from 1.5 to 2 pounds of good cod-liver oil should be added to each 100 pounds of mash, depending on the proportions of mash and scratch which are fed.

Laying chickens are not usually kept in strict confinement without access to sunlight; and when they are not so kept, it is unnecessary to supply the full quantity of cod-liver oil indicated above. The quantity to use will depend on the amount of sunshine the birds receive. During November, December, January, February, and March, from 75 to 80 percent of the quantity of cod-liver oil recommended for strictly confined birds should be used; and during the other months of the year, between 25 and 50 percent as much. In any case, the amount of cloudy weather should be the determining factor.

If cod-liver oil that has been fortified, sardine oil, or other fish oils are used, the quantity to be added to each 100 pounds of feed will

depend on the guaranteed potency of the oil in question. A fortified cod-liver oil is one to which additional vitamin D has been added.

### Caution Against Excess of Oil

A word of warning should be added about using too much cod-liver oil. Although 1 or even 2 percent of cod-liver oil ordinarily gives excellent results, it does not follow that 4, 6, or 8 percent will give still better results. Experiments conducted at the United States Animal Husbandry Experiment Station, Beltsville, Md., indicated that, in general, no advantage is to be gained by feeding a diet containing 3 percent of cod-liver oil, as compared with 2 percent. Also, it was found that when the diet contained as much as 4 percent of cod-liver oil, the hatchability of the resulting eggs was decreased, and that 6 to 8 percent of cod-liver oil materially decreased egg production, as well as hatchability.

HARRY W. TITUS, *Bureau of Animal Industry.*

**E**ROSION in the Black Hills After the Burning of the Forest Cover Many surveys have been made by foresters and engineers to size up the extent and import of the erosion problem, and detailed studies have been initiated to determine the effect of the removal of the land's natural cover—forest, brush, grass—upon erosion and run-off. It has become



FIGURE 19.—A typical timbered slope in the Black Hills, with abundant reproduction in the foreground.

increasingly apparent in the United States that a detriment to forest cover, particularly on steep slopes, means a detriment to soil and water supply.

A notable example of severe erosion immediately following the destruction of the forest cover by fire, in contrast with the very satisfactory protection afforded by forest cover on an adjacent area, is found near Rochford in the Black Hills National Forest, S. Dak. The destruction of the protective cover was the only change that

occurred prior to the time the erosion took place—all other factors remaining unchanged. Here the direct relationship between the removal of forest cover and subsequent erosion is clearly demonstrated.

Conditions throughout the timbered portion of the Black Hills region, which includes between 1 and 2 million acres, are generally ideal with regard to ground cover and its effect upon the prevention of erosion (fig. 19). Forage is not abundant on the more densely timbered areas. The grasses are of unpalatable species and grazing is relatively light. Consequently, there is seldom heavy tramping by livestock with resultant compacting of the soil, favoring rapid run-off. The watersheds are generally well timbered and a thick mat of humus and litter covers the ground. This thick layer of vegetable matter is a very important factor in delaying run-off and in preventing erosion.

#### Burned-Over Areas Becoming Restocked

Reproduction of ponderosa pine comes in abundantly on sites suitable for tree growth, especially where the soil is coarse and light.

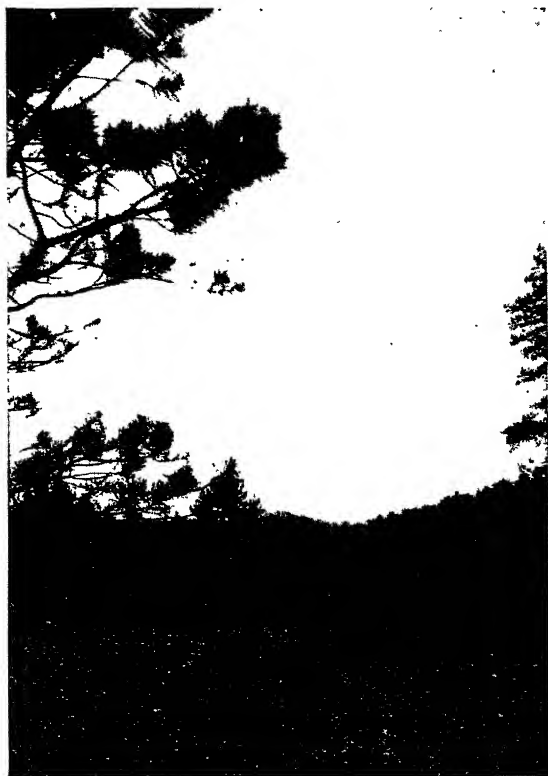


FIGURE 20.—Reproduction of ponderosa pine extending into a park. Here is a dense stand of grasses and herbaceous plants, and no sign of gully erosion.

As a result young forests are becoming established on many bottom lands and slopes formerly covered only with grass or farmed. In fact, there are few burned-over areas in the Black Hills that have not become stocked with ponderosa pine trees within a period of 10 years after fire (fig. 20).

On some areas within this section, however, there has been considerable active erosion during past years. But the old gullies have generally become well sodded, indicating that the former surface run-off and the accompanying active erosion have been effectively checked. Frequent examples of such "healing" of former erosion may be found.

In contrast to these conditions, the situation that exists on an

area in the northern portion of the Black Hills where the forest was destroyed by the disastrous fire near Rochford in the fall of 1931 is significant. Incendiaries set a number of fires which burned over an

area of 22,000 acres and were extinguished only after a 10-day battle by 3,800 fire fighters. On many slopes all of the trees, as well as the cover of grasses and weeds, were killed; duff and humus were completely burned.



FIGURE 21.—Conditions in a small gulch tributary to South Rapid Creek in the Black Hills in 1932, after the serious fire in the fall of 1931. The gully, 5 feet deep in places, was not in existence prior to the fire and is a direct result of a greatly increased surface run-off.

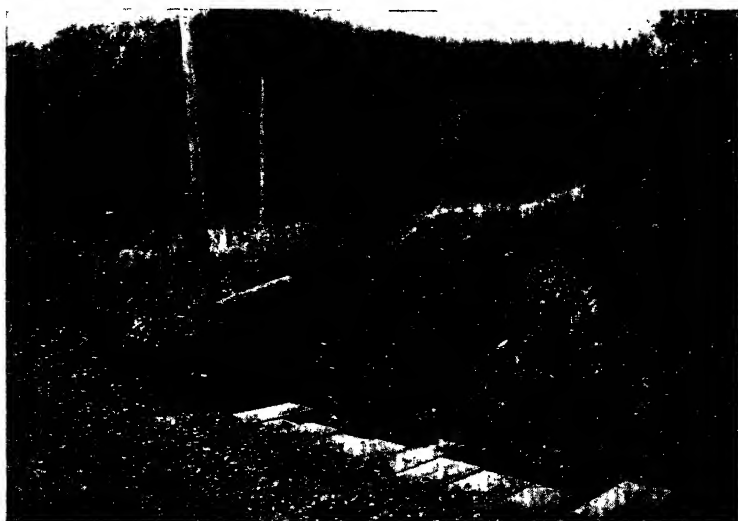


FIGURE 22.—Another view of the gully shown in figure 21. An 18-inch culvert was adequate before the drainage basin was burned over.

### Erosion Follows Forest Fire

The effect of this destruction soon became evident. During the following year (1932) rains washed down the bare hillsides carrying

quantities of rock and earth to the valleys below. Deep gullies were washed in the bottoms, and homesteads were covered with silt, rocks, and debris (fig. 21).

This destructive erosion was very pronounced along the road paralleling South Rapid Creek. A culvert in the road was washed out three times and the bridge which was finally installed had to be replaced (fig. 22). No such damage had occurred before the adjacent slopes were burned over. The stream bed was deeply gullied and large fan-shaped deposits of detritus varying from a few inches to 4 feet in depth were washed onto the homestead meadowlands (fig. 23).

It is significant to note that no gullying, depositing of soil and rocks, or washing away of culverts, bridges, and roadbeds occurred in other comparable situations where the cover on the nearby slopes had not



FIGURE 23.—Below the bridge shown in figure 22. The fan-shaped deposit of soil and rocks covers the meadow for a width of approximately 100 feet and to a maximum depth of 4 feet. Before the 1931 fire there had been no outwash from this gulch to damage the meadow. In the background is the burned-over slope.

been destroyed or damaged by fire. The contrasting areas provide a clear demonstration of the importance of keeping watersheds green if serious erosion is to be avoided.

M. W. THOMPSON, *Forest Service*.

## EROSION Protection by Terracing Necessitates Run-off Water Disposal

Provision for the proper disposal of the run-off water at the ends of terraces is one of the most important and difficult problems encountered in terracing

work. Pasture or timber areas sometimes make very satisfactory outlets, but careful attention must be given to maintaining the cover and to preventing the development of gullies at the foot of the slope where the water leaves the pasture or timber area. The water must be spread somewhat over the ground surface so as to prevent the con-

centration of sufficient water to cause gully erosion which may occur even on pasture or timber land.

Natural watercourses protected by vegetation on comparatively gentle slopes make the best outlets. Erosion in a channel on moderate slopes ordinarily can be prevented by a dense growth of vegetation, but on steeper slopes it is often necessary to provide additional protection such as is described later in this article. In figure 24 is shown a broad shallow draw serving as a terrace outlet and protected by a thick growth of grass. It is important that the draw be protected by grass as far up its sides as the run-off water will reach, to prevent the possibility of the water washing a gully down the slope on each side of the grass strip parallel to the watercourse.

Natural watercourses are not always available because the water generally cannot be carried beyond the field being terraced. In order to make the best use of natural drainage outlets, it is sometimes



FIGURE 24.—Natural watercourse seeded to grass to serve as terrace outlet channel.

advisable for neighboring farmers to cooperate in terracing adjoining fields by running the terraces across property lines. If this cannot be done then it becomes necessary to take the water from the ends of the terraces directly down the slope along a fence or property line. Broad shallow ditches should be constructed to carry the run-off water from the terraces down the slope generally at a comparatively low velocity. Where narrow deep ditches are used high velocities occur and serious cutting or erosion results.

The upper end of the broad shallow ditches on moderate slopes can be protected by vegetation alone provided a good dense cover of grass is established. However, where the ditch is to carry the discharge from more than three terraces of moderate length, some other protection against erosion is likely to be needed in addition to the vegetation. Usually checks of nonerodible material are installed at intervals down the slope. Ordinarily one check is located at the end of each terrace and another between each two terraces, on moderate

slopes. On steeper slopes the checks should be spaced at closer intervals. These checks serve the double purpose of checking the development of small gullies in the bottom of the channel and of spreading the water uniformly over the bottom of the channel which reduces the velocity and thereby the erosive power of the water.

Checks are sometimes built of sod or sod bags, which are effective for small drainage areas and for ditches on moderate slopes. The sod strips should be not less than 30 inches wide. They should be watered occasionally when first set out to obtain the best results. When sod bags are used they should be buried in the channel with the upper sides at the same height and even with the bottom of the channel. The bags should be laid end to end across the channel without leaving gaps between them which may be done more easily if the bags are not filled quite full.

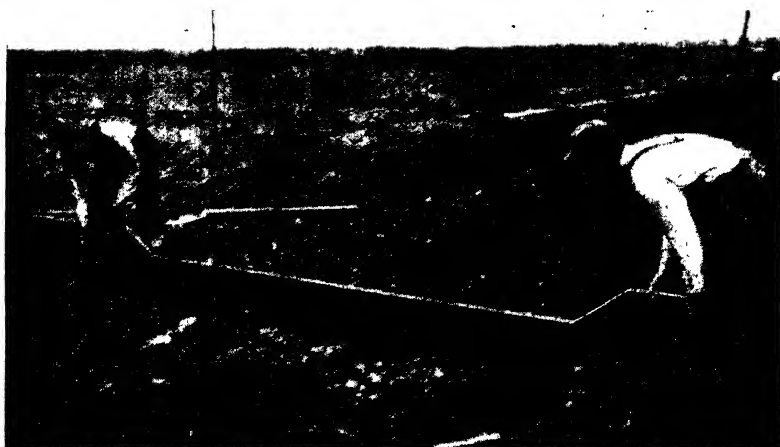


FIGURE 25.—Setting a lumber check in terrace outlet ditch.

One of the simplest checks consists of a 2- by 12-inch plank across the ditch buried with the upper edge even with the bottom of the ditch. Short planks are spiked at each end to form a protection to the side slopes of the ditch. A lumber check being set is shown in figure 25. Where dry weather is apt to shrink the soil away from the plank, it is recommended that a strip of sod about 12 inches wide be set across the ditch against the upper and the lower sides of the plank. These checks have been found to be effective on moderate slopes up to about 8 percent, for limited drainage areas.

In the installation of all checks it is important that grass be established on the bottom of the channel as soon as possible after the checks are built. Bermuda, bluegrass, and buffalo grass are very effective in controlling erosion in outlet ditches, and different grasses can be employed to advantage in mixtures suited to the different localities. Tall grasses and weeds should be avoided as much as possible, and where used should be kept cut down so that the discharge capacity of the ditch will not be materially reduced. If tall growth

is permitted in the channel, overflowing of the ditch banks will result which may start the development of gullies down the slope outside the ditch.

Another type of check that has been found effective is built of small loose rock or stone about the size of an apple. A trench 18 inches deep and 18 inches wide is dug across the bottom and side slopes of the outlet ditch and is filled with stone or rock carefully placed so as to make the volume of voids as small as possible. Usually one rain will fill the voids in the rocks with silt, which tends to form a bond between the pieces.

Erosion in ditches with large drainage areas or on steep slopes cannot be effectively controlled by the above-described method. Also,

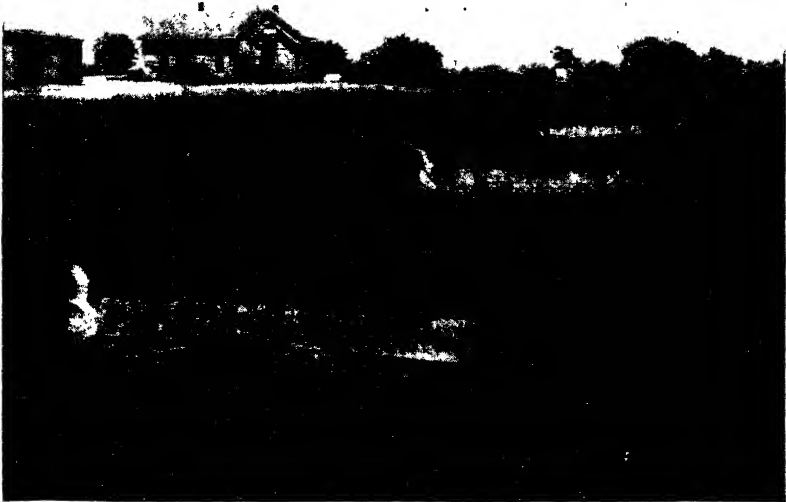


FIGURE 26.—Concrete check dams in terrace outlet ditch with Bermuda grass growing on sides and bottom.

it is not always practicable to build a broad shallow ditch and in some sections of the country it is not possible to obtain a satisfactory growth of grass in the ditches. Under these circumstances control of the erosion is usually accomplished by means of check dams built of permanent material and so spaced in the ditch that the crest of one dam is at about the same elevation as the foot of the next dam above. The object of spacing the dams in this manner is to reduce the fall of the ditch between dams and thereby the velocity and erosive power of the water. Figure 26 shows a broad shallow terrace outlet ditch in which erosion is controlled by low concrete dams, spaced as described above. Bermuda grass is growing on the bottom and sides of the ditch between the dams.

C. E. RAMSER, *Bureau of Agricultural Engineering.*



**F**ARM Laborers in United States Turn to Collective Action Because of their economic difficulties since 1929, farm laborers in this country have attempted collective action. Twenty-three strikes of agricultural workers were reported in 1933, and 25 in 1934 up to the end of September. At the end of September 1934, 33 agricultural workers' unions had affiliated with the American Federation of Labor. Of these, 12 were chartered in 1933, and 19 in 1934.

The economic background of these collective activities is indicated in the farm-wage and farm-labor demand and supply situation of the years 1929-34. The discussion of wages will be confined to rates per month with board, because more farm wages are paid in this than in any other way. Most comparisons of wage rates are made with those of the pre-war years 1910-14.

Farm wages changed but little from 1909 to 1915. They rose during the war period to more than double pre-war rates; the rise

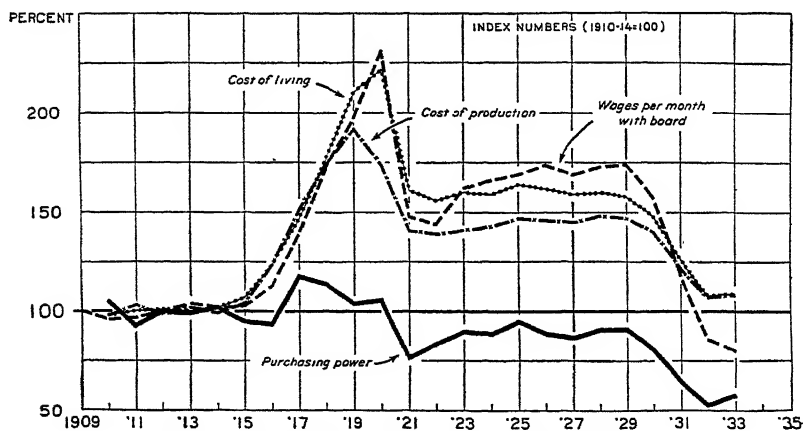


FIGURE 27.—Specified farm costs and farmers' purchasing power.

was nearly proportional to the rise in farm costs of living and in farmers' purchasing power. These relationships are indicated in figure 1.

The post-war depression of 1921-22 forced farm wages back, so that about half the wartime increase disappeared. Yet farmers found it hard to pay their laborers because the purchasing power of farm products had fallen off. Laborers found that their wages had fallen even more than farm costs of living. In addition, the industrial depression forced many workers previously nonagricultural to compete for farm jobs.

Farm wages had risen 10 percent by 1923, and held the gain from then through 1929. In the same period farmers' costs of production rose slightly. Farmers' purchasing power gained through 1925, but did not make up the post-war losses; after 1925 it declined again. Farmers throughout the 9 years, 1921 to 1929, found wage charges harder to meet than before the World War. Laborers, on the other hand, received wages higher in comparison with farm costs of living than before the war.

## Wage Decline Marked After 1930

The economic collapse which began in the autumn of 1929 did not greatly affect farm wages or costs until the following year. From then through 1932 its effect was marked. There were no seasonal gains to check the fall of farm wages until after April 1933. They fell to four-fifths of the average of the 5 pre-war years. The farm-wage index declined to a third above that of farm-commodity purchasing power, and a quarter below that of farm costs of living. Farm-commodity purchasing power suffered a two-fifths drop to barely over half of that of the pre-war period. In 1932 it was 53 percent of the base period; a gain in 1933 brought it up to 58 percent.

From 1909 through 1920 farm-wage rates varied similarly in different parts of the country. Since then there have been striking regional differences. Farm wages in 1921 fell not quite 30 percent in the North Atlantic States, but in the West Central and Mountain States they fell nearly 50 percent. In general, these differentials have been maintained. Farm wages in the North Atlantic States in 1934 were close to or above their pre-war rates. Those of the other sections mentioned were decidedly below their pre-war rates, even after the summer increase.

From the post-war depression of 1921-22 until the winter of 1929, the demand for and the supply of farm labor was below normal, with supply usually above needs for the country as a whole. By April 1933 farmers were offering only 3 jobs, where they normally offered 5. Meantime, the farm-labor supply increased. The excess was increased by the competition of men thrown out of other employment. There were 5 workers available in January 1933 for every 2 farm jobs available. Since then, the demand for labor has increased in both agriculture and urban industry. In the summer of 1934 there were only 3 workers for every 2 farm jobs.

During the last 5 years many farmers have been compelled to reduce the number of their laborers, or their wages, or both. Hired farm laborers have striven to hold their jobs lest they be unable to get other work. The inevitable result has been a heavy drop in farm wages. By April 1933 average farm wages with board had fallen to \$14.67 per month—less than three-quarters of the pre-war average. Some laborers worked for their board and lodging alone during the winter of 1933-34. There were reports during the summer that farmers were paying as little as 50 cents a day without board. Laborers with families were particularly hard hit.

In most previous years farm laborers were able to obtain relief by finding employment in other industries. Between 1929 and 1934 they had practically no such opportunities. Instead, there was a farmward movement of city workers. Many farm laborers could not get work and had to appeal for public help. In parts of the country even farm operators had sometimes to ask relief.

Such was the situation that forced hired farm laborers into collective action.

Farm laborers in some foreign countries have organized to a considerable extent. Those in the United States have made only a comparatively small start.

### Difficulties of Organization

Important difficulties hinder the formation of labor groups among farm laborers in the United States. Most hired farm workers are the only employees on the farms on which they work. They are widely scattered. Many farmers hire no labor. Relations between laborers and operators on farms are usually closer and more personal than in other enterprises; difficulties are better understood and adjusted than in most urban industries. Working and living conditions and relations with employers may vary so greatly as to prevent much class interest among farm laborers. Many agricultural workers move from one locality to another, and from agricultural to other jobs, so that contact and cohesion with their fellows are temporary and slight. Normally, it is possible to obtain relief from unsatisfactory farm working and living conditions by moving to other work. Organization among hired agricultural laborers has usually been attempted only when large numbers of them in limited areas have much in common, and where living and working conditions and wages have been unusually poor.

There have been three principal periods of effort to organize agricultural laborers. (1) The American Federation of Labor shortly after 1910 effected organizations of migratory trade-union members and seasonal agricultural workers on the Pacific coast. Most of these unions lasted only a short time.

(2) The Industrial Workers of the World formed the Agricultural Workers' Industrial Union. During the World War the activities of that body were widespread in the Wheat Belt and the far Western States. It met strong opposition. The membership was largely migratory, and of late years it seems to have declined.

(3) The most recent period of activity in the organizing of agricultural laborers followed the crisis of 1929. Organization seems to have been made more easy in some parts of the country by the depression. Laborers have been less able to migrate. There has been a growth of cohesion. The movement has spread east of the Mississippi for apparently the first time. Unions have been formed among orange workers in Florida and onion laborers in Ohio.

One indication of the extent of the movement is the number of charters granted in 1933 and 1934 by the American Federation of Labor to groups consisting principally of agricultural laborers. Some farm-labor groups have been formed without affiliating with national bodies. Several such attempts have been made on the Pacific coast, particularly among foreign-language groups of fruit and vegetable workers, such as the Spanish-Americans. Labor societies and unions have risen among sugar-beet workers of Colorado and nearby States. One was reported in Michigan. Probably the oldest and longest standing union of agricultural workers has been a union of sheep shearers operating largely west of the Mississippi and at stockyards and feeding plants near Chicago.

### Causes of Some Strikes

Farm working conditions or wages, or both, have been the causes of some strikes. Most of these disputes have occurred on the Pacific coast; there have been others in Arizona, Colorado, Ohio, Florida, New Jersey, and Massachusetts. A strike of farm laborers usually

affects directly less than 1,000 workers. One strike, however, affected 12,000. There has been violence in some of the disputes. The good offices of the Conciliation Service of the United States Department of Labor were called upon in 4 farm labor strikes in 1930; 1 in 1931; 5 in 1932; 8 in 1933; and 8 in the first 7 months of 1934.

Conditions driving farm laborers to organization have often been such as to make them receptive to radicalism. Employers and the public, on the other hand, have frequently actively opposed new labor boards because of suspicion and of self-interest. Recent developments in sugar-beet-growing sections have demonstrated, however, that properly conducted farm-laborers' organizations can be very helpful in service to their members and in their relations with beet growers, sugar companies, the public, and Government officials.

The past history of such movements indicate that when the present economic stress is over, the movement will decline in numbers and influence, but if the farm laborers through wise means can obtain improvements in their living and working conditions and in wages, the effects will be far-reaching.

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**F**ARMING, Forestry, and Industry Profit from Land-Use Planning in California In California the most critical conflicts between major land uses occur in the foothill belts of the Sierra Nevada and other mountains. A recent comparative study in a typical mountain and foothill county by the California Forest and Range Experiment Station of the United States Forest Service and the Giannini Foundation of the University of California has brought out some very significant facts and led to conclusions which may be of use in similar difficulties elsewhere.

### The Section Studied

Eldorado County, in the elbow of California, has a total area of about a million acres, of which the eastern half and a little more is within the mountainous virgin-timber belt, the division nearly coinciding with the boundary of the Eldorado National Forest at 3,500 feet elevation—about the upper climatic limit of agriculture. In the early mining days this was the most populous county in the State. Agriculture flourished with mining. Peaches cost \$3 apiece in gold. But mining declined, and agriculture with it. Then came lumbering. Last has come the specialization of agriculture in fruit orchards, which in its turn has fallen upon evil days. Population is dwindling. On a declining tax base, tax costs are rising, even without the influence of a world-wide depression. What can be done about it?

The lower, or western and southern portion of the county, which was mainly grassland from the beginning, is occupied by large livestock ranches that rely mainly on the high mountain ranges within the national forest for summer feed. The areas of agriculturally good soil are always scattered, in small patches. The larger part of those at suitable elevations for agriculture are devoted to fruit raising, mainly of pears. But all this cultivated land is less than 2 percent of the county area. Upward from Placerville, ranches are more and more scattered and isolated, and income is more precarious and dependent upon supplemental employment.

Pine timber once extended down to the 1,000-foot level. It was largely cut off in the early mining days, but more than 125,000 acres have come back to second-growth timber, fairly even-aged at an average of 60 years and varying in density and thrift according to the quality of the soil and extent to which it has been burned over. The rest of the once-timbered area is now mainly covered by brush or scrubby oak woodland.

This second-growth timber of the western part of the county already amounts to  $1\frac{1}{4}$  billion feet board measure. If protected from fire and allowed to grow another 60 years, it could produce 4 billion feet, worth by that time probably \$20,000,000. The commercial timber area, largely between 3,500 and 6,000 feet elevation, contains a remarkable volume of fine timber constituting the largest single item of present wealth in the county. Above the 6,000-foot level the timber becomes less valuable for lumber production, and the chief value of the land is for wildlife conservation and recreation, which is growing more rapidly in volume and monetary return than any other land use of the county.

### How the Study Was Made

A thorough survey of the physical lay-out resulted in a classification of the county into land classes based upon soil, topography (rough-



FIGURE 28.—The Eldorado County foothill country. Grass, woodland, and brush.

ness), altitude, and climate, also a map of the vegetation cover of the county including virgin timber, second growth, woodland, brush, grass, and crop land, and of the area which once bore forest but is now without it, together with detailed data on the rate of growth of the timber on the different soils. This was followed by economic surveys of sample farms of every major class in the county; also of the irrigation districts, the industries, the power situation, with present and prospective reservoir development; of recreational use and of the county government, including roads, schools, and taxation; and the relation to all these of the national forests. The survey covered about

half of the area and volume of virgin timber in the eastern half of the county and most of the higher land (fig. 28).

### What the Plan Provides

The result of this work was a division of the county into five use zones, each with a definite character of present use, and individual possibilities of improvement of its private and public returns.

Fruit raising is recommended to be held at its present expansion until better market prospects develop. The efficiency of live-stock raising, it is pointed out, may be improved by larger home production of supplemental feed and by group organization to make possible a larger and more coordinated use of mountain range, progressively by elevation with the advance of the season.

One of the findings which affects widely the prospective best use of lands is that the second-growth timber area, by reason of its high timber-growing capacity, is much more valuable for timber crops than for grazing. It is shown that the ranchers, instead of continuing their long-tried efforts to improve this range by slashing and burning the young timber, will reap greater ultimate profits by protecting the second-growth timber. This will provide a home supply of box material for the fruit ranchers and will stabilize farming by giving the ranchers profitable supplemental employment (fig. 29).

In the areas of scattered occupancy toward the upper limit of agriculture, where the land is increasingly occupied by second-growth timber, it was often found that the settlers could not make enough money to live save by working on the county roads which were put in so that they could live there. And the maintenance of their little schools of 5 to 10 pupils cost as much as \$300 per pupil, as against \$70 per pupil in schools of 25 or more pupils in better populated districts.

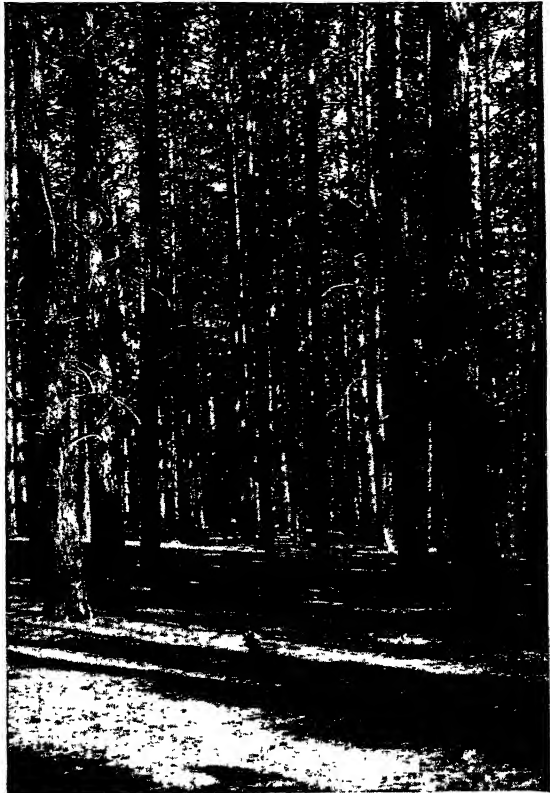


FIGURE 29.—A well-stocked stand of 60-year-old pine in western Eldorado County. This second growth is just entering the home stretch toward merchantability and its owners cannot afford to sacrifice its 60-year start by cutting it now to make poor grazing.

It seemed clear that the whole county would profit by devoting this district to forest-crop production and gradually depopulating it—not by arbitrary dispossession, but by providing better opportunities for making a living elsewhere in connection with the sawmills and other small industrial centers.

A definite part of the plan for the county is the stimulation of localized industrial development, under the guidance of a competent survey of opportunities and needs, so as to avoid misdirected promotion. Coupled with this will be an endeavor to assure the maintenance of renewable land resources, such as forests and grazing forage by getting the industries which use them to take from the land no more than its growth can supply. As the most profitable use to which they can be put, it is planned to devote the higher mountain lands to recreation, as is already the practice in the Eldorado National Forest.

The path to these ends is the coordination of private management with that already in practice upon the national forests. Such coordination in the interest of the whole county community will, it is hoped, result in soundness of economic and social structure. The leaders of the county have accepted the plan and through a strong committee are moving toward its consummation.

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**F**ARM-MANAGEMENT Research Needed in Crop-Adjustment and Land-Use Planning All change and readjustment in agriculture involves, directly or indirectly, judgment and action by the individual farmer. The most important test of the desirability of any proposed adjustment is whether or not it adds to the farmer's net financial income or otherwise raises his standard of living. Weighing the advantages against the disadvantages of changes, arriving at decisions, and then carrying out the decisions, constitute the management function in the farmer's job. An understanding of this management function is vital to the successful shaping and administration of adjustment programs.

In the earlier years of farm-management research its chief objective was to find the profitable forms of organization for farms and the most effective methods of farm operation, with a view to using the results in educational effort to make poor farmers good and good farmers better; in other words, to make farmers more efficient in the restricted sense of that term. Now with the development of governmental policies and programs for agriculture another objective of prime importance is in evidence. It is to obtain and make available to responsible public agencies the essential understanding of the farm-management function, and of the conditions under which the farmer operates. Farm-management research, to be effective in reaching this objective, must give those who conduct it an accurate and detailed understanding of what the farming actually is in the area being studied, and through such understanding give them a vision of what the farming can be with the best adjustments that are possible and practicable. It must also give an understanding of the forces and conditions that have made the farming what it is and that create its better possibilities—as yet unrealized. Only through such understanding can the effects of proposed measures for improvement and the effects of evolving economic

conditions and forces be correctly judged. The considerations leading to managerial decisions are as important to a true understanding of agriculture as the results of the decisions themselves.

All this requires that farm-management research avoid the danger of being too formal and stereotyped. It cannot be carried out successfully merely through the gathering and analysis of statistics. Important as figures and their careful analysis are, the farm-management research worker must think and live himself into the farmer's own situation and problems through adequate first-hand contact and observation, or his results will be sterile.

Farm-management research as thus conceived bears a vital and direct relation to public agricultural programs. This program is creating new considerations which the farmer must take into account in his own planning. They vitally affect the farmer's mode of utilizing his private resources. It is important that the Government's plans involving these changes be tested and approved by the criteria of sound farm economy.

### Farm-Management Phases of Crop and Livestock Adjustment

The first great phase to be developed in the new public program for agriculture was crop and livestock adjustment. The leaders responsible for the development of this phase of the program realized from the beginning the importance of gearing it closely to the nature of the farm and the managerial problems of the farmer. However, haste was imperative and only limited recognition could be given to these considerations. With the first year of experience as a background, planning for future programs is being done with consideration of the effect of the details of such a program on the internal organization and operation of the farms affected.

The farmer's net return from operation is, of course, a function of three variables, volume, prices, and costs. The approach of the present adjustment program is primarily from the price side. It is deemed imperative to secure for the farmer more adequate prices in order that the income side of his balance sheet may be restored to a more favorable condition. However, in the long run the cost side of the farmer's equation cannot be ignored. In a broad way costs are tied up not only with the prices the farmer must pay for the things he produces with but also with the efficiency with which these things are used on the farm.

### Costs Fixed and Variable

It is important to consider the nature of the various cost elements entering into the farmer's production. They may be broadly classed into two groups, those which are fixed and those which are variable. In this sense the fixed costs are those which, within a given year, or longer, do not vary with the volume of the farm commodities produced. The variable costs, on the other hand, are those which tend to rise and fall pretty much in proportion to the volume of product. One of the most important considerations from this point of view in planning an adjustment program is the effect which the program itself will have upon these two classes of costs. Without sacrificing the main objective of the program, namely, the adjustment of supply in its effect upon prices, it is extremely desirable so to shape the details of the program that it will be easy for the farmer to participate in terms of



his internal organization and operation particularly with reference to costs.

By way of illustration, let us take the case of a Great Plains wheat farmer. His fixed costs consist of interest on his investment in land, interest and depreciation on improvements on his land and on his working equipment, and his own labor and that of his family. His variable costs are made up largely of expenditures for fuel and oil, for repairs for his equipment, and for such hired labor as he must engage. It has been determined from recent studies that, with the equipment now in common use in that area, the best use of the farmer's resources can be realized on such farms by the proper adjustment of tillage and harvesting machinery to the power unit, let us say, a 15-30 tractor, together with the adjustment of acreage that will realize a maximum use of this outfit of equipment in carrying out the most effective production operations. A farm consisting of from 800 to 960 acres of which about 600 acres are in wheat seems to represent a best adjustment of this unit of equipment to land and to the farmer's labor. The major part of the cost in the operating of such a unit falls in the fixed-cost class. From the point of view merely of efficiency, a reduction of 10 to 20 percent in the wheat acreage means a lower utilization of this labor and equipment, and hence a decline in efficiency of use. Granting that the benefit to the income side of the farmer's business amply justifies this sacrifice in use, the problem remains of so adjusting the program, at least in its long-time aspects; as to make the sacrifice in utilization of his labor and other resources, and its effects on costs, a minimum disadvantage on the production side.

### But No Costs Absolutely Fixed

In the long run no production costs are absolutely fixed. As machinery and power units become worn out and have to be replaced, and as the farmer has time, with the aid of Government agencies, to replan and reorganize his farm, these disadvantages can be reduced to a minimum. It is important to recognize these considerations at the outset and to provide in the planning definite means of their adjustment. In such planning the results of effective farm-management research have great utility.

The effect of proposed adjustments in one region may have important effects on the farming in other regions. There is much division of labor regionally in the complete production of some farm products as they finally reach the market. For example, the Corn Belt farmer buys feeder cattle and sheep from the rancher of the West, and raises feed for the dairy farmer of the Northeast. Due account must be taken of how proposed adjustments affect the individual farmer's managerial problems, not only in the region where the specific adjustment is proposed, but in the other regions affected.

Another matter which is receiving increasing attention in plans for the future is that of giving the farmer a more flexible contract under which he can work out his adjustment with due consideration to his own peculiar farm conditions. A sliding scale in the percentage reduction has been suggested as one means of making these programs more flexible and more applicable to the varying conditions on farms. The combining of crops into groups representing a single acreage base, together with the requirement of a reduction within certain maximum

and minimum percentages from this base, might be one way of realizing this desirable flexibility.

Another consideration of first importance, and one which is receiving increasing attention in the evolving plans, is that of soil conservation. Too often the farmer's own program has involved a sacrifice of basic productivity in the light of immediate needs. The Government agencies are recognizing an opportunity in the adjustment program for governmental help to the farmer in correcting this evil. In this connection the nature of public effort needs to be determined through an adequate understanding of the farm organization and operation in the areas involved.

### Farm Management in Land-Use Planning

Land-use planning is another major element in the general readjustment program for agriculture that involves many vital farm-management considerations. From the farm-management viewpoint it appears that there are two fundamental objectives in this program as it is being evolved. The first is a better conservation of natural resources basic to the agricultural industry, and the second is the more economic use of such resources currently, in order to provide better support for an adequate standard of living for those engaged in farming. These objectives have far-reaching importance both from the point of view of the public and of individual farmers.

In this phase of the Government's program for agriculture, the public is assuming responsibility for the correction of much evil that has crept into the utilization of agricultural land through the working out of the previously prevailing land policy of the country which was based almost entirely upon private initiative in the selection, development, and use of farm lands. The program involves a major classification of land with reference to suitability for various types of uses; but, more important, it involves action facilitating the shifting of lands from undesirable uses into more suitable uses.

In both of these phases of the land-use program important farm-management considerations enter. Classification itself must be based on certain criteria or tests. Part of these tests relates to the public welfare arising out of its vital interest in the most economical use of the land itself; but part also relates to the providing, on a most economical and adequate basis, for the publicly financed means, such as roads, schools, and other facilities, for public service. Other tests, equally important, center in the farm economy itself. No use of land is desirable either from the social or individual point of view that does not provide for its users an adequate basis for the support of a good standard of living. This implies the necessity of farm-management tests. No land now in use in farming can be classified as too badly fitted to its present use without adequate consideration of whether or not, under the best systems of farming possible, it can support a successful farming program. Nor can other lands proposed for development for farming purposes be so designated without these same farm-management tests as to whether successful and adequate programs of farming can be derived to fit this type of land. It follows that in the program of land classification an adequate understanding of the considerations involved in the organization and operation of farms be made an important basis of the classification.

## Relocation of Farm Families

The plans for action in this broad program involve very definitely the shifting of farmers from lands which may prove on examination too poor for their present use and the establishment of these farm families upon other lands which after due consideration may prove to be adequate for successful farming. This is the most vital phase of the program. Financial and personal considerations vital to the farm families being dealt with are involved. The agencies must be as sure as it is humanly possible to be that the new establishments will afford the opportunity which is intended. This should be tested by realistic considerations of what type or types of farming can be set up and operated in the new location, and what approximately, they may be expected to yield over a period in the way of money and living under a given projected economic situation.

For example, it has been proposed that in many parts of the country the conservation objectives in the way of preventing erosion and the building up and maintenance of soil fertility cannot be reached under the present system of farming, and that a considerable degree of consolidation looking toward larger farm units is necessary because the systems of farming which do promise better results in the direction of conservation, involving less grain growing and more hay and pasture, require larger areas for the support of a farm family. Closer examination in many areas reveals the probability that consolidation may not be feasible, that the remedies for the present difficulties must be sought in the direction of reorganization of cropping and livestock systems pretty much within the limits of the present size of farms. This all involves a most careful examination of the specific conditions within each given area from the point of view of the internal organization and management of farms.

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## **F**INENESS and Maturity are Important Elements in Cotton-Fiber Quality

Strength of cotton fiber is an important factor in the strength of yarns and fabrics, although in the past its importance may have been over-emphasized. It is generally less recognized that fineness and maturity of fiber are also important elements which materially influence the strength and other properties of the manufactured products.

Fineness refers to the width or the cross-sectional size of the fiber. This differs greatly among fibers of American upland cotton (fig. 30). Methods of measuring fiber fineness generally involve determination of either the so-called "diameter" (in the case of cotton fibers the "ribbon width"), or of the weight per unit of fiber length (approximately proportional to the average area of cross section of the fiber wall). In general, the latter determination is the more advantageous as the resulting measure is more nearly comparable with that for yarn fineness.

Maturity, on the other hand, refers to the fiber-wall thickness, or, more accurately, to the ratio of actual wall thickness to the maximum wall thickness that is possible if the cotton fiber were permitted to reach its maximum growth. Figure 31 shows American upland fibers of varying thickness of walls. It will be evident that due to different

degrees of fineness, actual wall thickness may vary for the same degree of maturity.

Fineness has long been recognized as an important element of quality in wool, silk, and more recently, rayon. It has not received the same recognition in the case of cotton. Possibly the close relationship

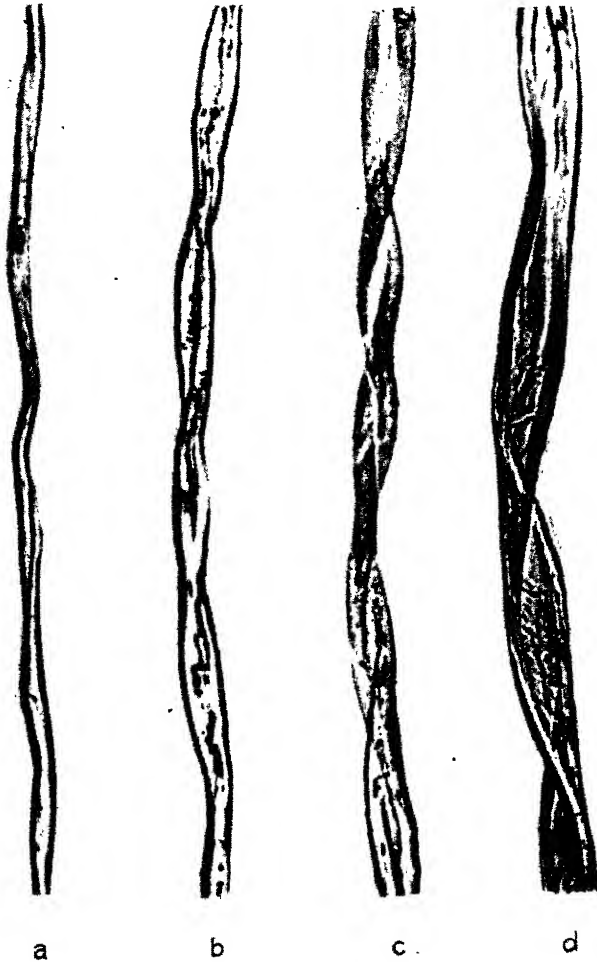


FIGURE 30.—Variations in fineness of fibers from American upland cotton. a, very fine mature fiber; b, fine mature fiber; c, medium mature fiber; d, coarse mature fiber.  $\times 475$ .

between fiber fineness and staple length in cotton made the distinctive effects of these two properties less noticeable, since the longer staples generally meant finer fibers. The distinction was demonstrated by studies in which long-staple sea-island cotton, which possesses the greatest degree of fineness of any cotton, was cut into shorter lengths to simulate  $1\frac{5}{16}$ - and 1-inch cottons of natural growth which are nor-

mally less fine. The 22s yarn spun from the 1-inch staple cut from this sea-island cotton showed an average skein strength of 146 pounds, a figure 51 percent higher than the average of a large number of American upland cottons naturally of this staple length and 27 percent higher than the strongest yarn ever manufactured from this staple length group in the spinning laboratory of the Bureau of Agricultural Economics.



FIGURE 31.—Variations in maturity of fibers from American upland cotton. a, very immature or thin-walled fiber; b, immature or thin-walled fiber; c, mature or normally developed fiber; d, abnormally matured or over-thickened fiber. + 475

The relationship of fiber fineness to length, however, holds only in a general way. Fineness of fiber has been found to vary materially from fiber to fiber of the same length, and from length to length of the same sample; it varies also with variety, soil, and growth conditions of the plant.

#### Why Fineness is Important

Fineness is important (1), because it determines the pliability of the fiber; that is, its ease of bending. Anyone who has examined yarns or fabrics made of fibers such as sisal, hemp, jute and horsehair recog-

nizes their stiffness and coarseness and their general lack of adaptability and usefulness for certain purposes. For example, cloth made of such coarse fibers is not very suitable for clothing; it is heavy, harsh, and irritating to the skin. With increasing coarseness of fibers, rigidity and stiffness increase much more rapidly than does the size of the fiber. For example, for a given shape of fiber if the size is doubled, the rigidity and stiffness is approximately quadrupled. If the size is tripled, the rigidity is increased nine times. Thus fineness, as measured by the weight per unit of fiber length, has a magnified influence on the flexibility of the fibers and presumably also on the softness and flexibility of yarns and fabrics made from them.

Fineness of the fiber is important (2), because it determines the average number of fibers in yarn of given count and in turn the yarn strength. This is because the count or size of a yarn is based on the weight per unit of length and a definite length always contains a definite weight of fibers. Therefore, the finer the fibers, the greater the average number in sections of the yarn. The average number of fibers per section of yarn seems to influence yarn strength in three ways: (1) Through their greater flexibility, the finer fibers, when twisted, have greater binding power and the frictional potentialities can be used to greater degree. (2) A given number of fine fibers will make a finer yarn than the same number of coarse fibers. In the illustration above cited of the short-staple cottons made artificially from sea island, the  $\frac{1}{16}$ -inch cut fiber could be spun easily into 60s yarn of very good strength, an achievement not previously duplicated, so far as is known, with cottons of this natural staple length. Frequently cottons of  $1\frac{1}{8}$  or even  $\frac{3}{16}$  inches in staple are spun into 60s yarn only with difficulty. The success of the results with the sea island was undoubtedly associated with the larger average number of fibers in the section of yarn than would have been present in the usual cotton of  $\frac{1}{16}$ -inch staple length. (3) The surface substance of the fibers seems to be stronger than the interior substance, due to a "skin effect", and consequently the finer fibers, having proportionately more surface, should contribute greater strength to the yarn.

Fineness of cotton fibers is dependent on two major factors. One of these is the natural or inherited tendency of the fibers. Just as some breeds of horses are naturally larger than other breeds, so some species and varieties of cotton have naturally larger, coarser fibers than other species and varieties. For example, sea-island cotton belonging to a different species than the usual American upland varieties has naturally a finer fiber. It is entirely probable that the natural fineness of cotton fibers may be materially altered by breeding.

### Growth Factors in Fineness

The second factor that determines the fineness of cotton fibers is that of growth. All factors such as soil, moisture, plant food, climate, and the like, which affect plant growth may be expected to influence also the thickness of the fiber wall. This is the effect of maturity on fineness. During its first 25 to 30 days of growth a cotton fiber elongates rapidly but its walls remain very thin. The type of growth then changes and during the next 25 to 30 days the length changes but little, but the walls thicken by increase of their secondary deposit. If this second period of growth is arrested, or if the climatic conditions restrict it, the fiber will not produce as thick a wall as it otherwise would

have done. If only a small amount of secondary deposit is laid down, the wall will be thin and the fiber relatively immature and fine. However, if conditions of growth are favorable, deposition of cell-wall substance will continue and the wall will become thicker and the fiber relatively more mature and coarser. Relatively fewer of the well-developed mature fibers will be required in the cross section of a yarn of given size, than of the lesser developed, immature fibers.

Although cotton fibers from varieties that normally produce medium or coarse fibers may be fine as a result of immaturity alone, this type of fineness is not necessarily advantageous from the standpoint of ease of spinning and quality of yarn. Too great fineness from this cause may introduce distinct difficulties into the spinning processes, and contribute to nep formation and to unsatisfactory dyeing properties of yarn and fabric. Thus, while a given degree of fineness corresponds always to the same average number of fibers in a yarn of given size, there is a qualitative difference in fineness that depends upon the thickness of the fiber walls. Because of the flattened form of its cross section, an immature fiber should be, theoretically, much less rigid or stiff than a mature fiber of the same wall cross section. Perhaps this explains the seemingly greater tendency for thin-walled cotton fibers to form neps as compared with thick-walled fibers.

From the theoretical standpoint and assuming identical composition, it might be assumed that a yarn made from immature fibers should possess the same strength as one made from mature fibers, fineness and other factors being the same. Or, if the greater flexibility of the thin-walled fibers is advantageous, the yarn made from immature fibers might be even the stronger. Limited observations indicate that this relationship is by no means simple and that considerable work will have to be done before the relationship of fiber maturity to yarn strength can be determined.

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**F**OREST Cover Proved a Controlling Factor in Flood Prevention Man's mistreatment of the soil or of its natural forest or other vegetative cover as a cause of increasingly destructive erosion has been convincingly pointed out by studies recently conducted by the Forest Service in California. In these studies large soil tanks and  $\frac{1}{16}$ -acre plots in the mountains produced evidence that vegetation not only obstructs and retards the run-off of surface water, but also, by means of the leaf litter, and the action of the roots, keeps the topsoil so porous that a large proportion of rain water percolates continuously into the soil to join underground supplies. Litter-covered soil was found to absorb 5 to 10 times as much water as that absorbed by bare soil. Run-off was just the reverse—10 to 30 times as great from bare soil as from litter-covered soil. Generally 100 to 1,000 times more soil was swept away from bare soil plots than was eroded from forest-covered plots, and the rate of erosion increased as the intensity of rainfall increased.

When these results are applied to field conditions, the conclusion is that gentle rains, if well distributed through the season, cause little or no damage on newly burned areas, since they do not bring sufficient water at any one time to produce erosive run-off. Heavy rains, how-

ever, with an intensity of 1 inch or more per hour even though of brief duration, quickly puddle the surface soil, seal the soil pores, and start a rapid process of gully erosion. When this stage is reached, the excess water, unhindered by the usual chaparral cover with its accompanying carpet of leaf-litter, rushes down the barren slopes gathering up soil and rock fragments in ever-increasing size and volume until it reaches the bed of the stream. There the accumulated flow is soon swelled to a raging torrent, sweeping all before it, scouring the channel, snapping trees from their roots, plucking huge boulders from deep embedments, and finally surging forth upon the valley floor in great destructive waves of mud, debris, and boulders.

In southern California, where the mountains are covered with an "elfin forest" of highly inflammable chaparral, frequent forest fires and the characteristic heavy rainstorms of the winter season are re-



FIGURE 32.—This Montrose cottage is one of the 400 homes wrecked by the New Year's flood from the fire denuded watershed. The great gully in foreground carried away lawn and garden.

sponsible for numerous highly localized "burned area" floods. On the last day of 1933 there occurred in the Verdugo Creek watershed of Los Angeles County a flood which, because of the urban development in its path, was the most tragic and destructive single flood since the white man came to California.

A storm of record volume, beginning on December 30, a little more than a month after a severe forest fire had swept the mountain slopes above the valley and reduced their chaparral cover to ashes, poured 12 inches of rain upon the steep and barren slopes within a period of 56 hours. The ensuing mud flows reached their climax at midnight on New Year's Eve and swept through the towns of La Crescenta, Verdugo, and Montrose in numerous streams with such force that boulders weighing from 20 to 50 tons were carried thousands of feet and deposited on the city streets. In each stream path suburban homes were wrecked and their gardens either gouged away by deep gullies or buried under mud and boulders (fig. 32). In the small resi-



dential valley of La Crescenta 34 persons were swept to their death, and property, including more than 400 homes, was destroyed or damaged to the extent of \$5,000,000 (fig. 33).

Such torrential floods are usually reported as having been caused by a cloudburst, regardless of the condition of the watersheds from which they issue, and in the absence of adequate data it is difficult to prove the true causes. In this case, however, a study of rainfall, run-off, and erosion throughout the storm area was immediately undertaken by the Forest Service and Los Angeles County flood-control authorities, and information obtained that permitted comparison of storm results in the La Crescenta area with those in the surrounding territory. It was found that the rainfall was remarkably uniform over a foothill and valley area approximately 20 miles wide by 50 miles long. Some 30

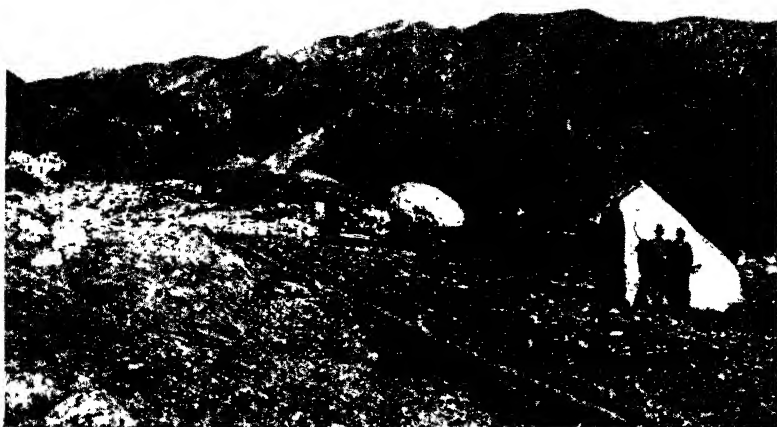


FIGURE 33.—Boulders weighing 60 tons each deposited on a street of La Crescenta by the New Year's flood from Dunsmere Canyon.

stations in the area measured an average rainfall of 13.03 inches, while the average on the burned watershed was 12.56 inches.

#### Run-off Greater from Burned Area

The peak run-off of water in streams from the burned area was conservatively calculated at 500 cubic feet per second per square mile, plus at least an equal volume of solids, making a total flow of 1,000 second-feet per square mile of watershed (fig. 34). In striking contrast, the simultaneous peak flow from the well-forested Arroyo Seco watershed, contiguous to the burned area, was only 58 second-feet per square mile, although rainfall in the Arroyo was 14.85 inches, or more than 2 inches greater than in the burned area. In the San Dimas Experimental Forest, 20 miles east of La Crescenta Valley, several well-forested unburned watersheds yielded peak flows averaging only 53 second-feet per square mile from 10.8 inches of precipitation.



FIGURE 34.—Dunsmere Creek, ravaged by flood from the burned area. Line of boulders near the building indicates extent and force of the torrent. All trees were torn from the stream banks, and rock-matress check dams were swept from its bed. Man stands near the remains of one of the wire-bound dams. Compare with figure 35.

### Enormous Erosion from Burned Area

Surveys showed that 659,000 cubic yards (more than a million tons) of soil and boulders were caught in debris basins or deposited on the Crescenta Valley floor, in addition to unknown quantities of lighter material carried to the ocean. These figures are more significant in that the burned area of 7 square miles comprised only one-third of the Verdugo Creek drainage basin. With ample allowance for material scoured from channels beyond the burn, this shows an erosion rate of

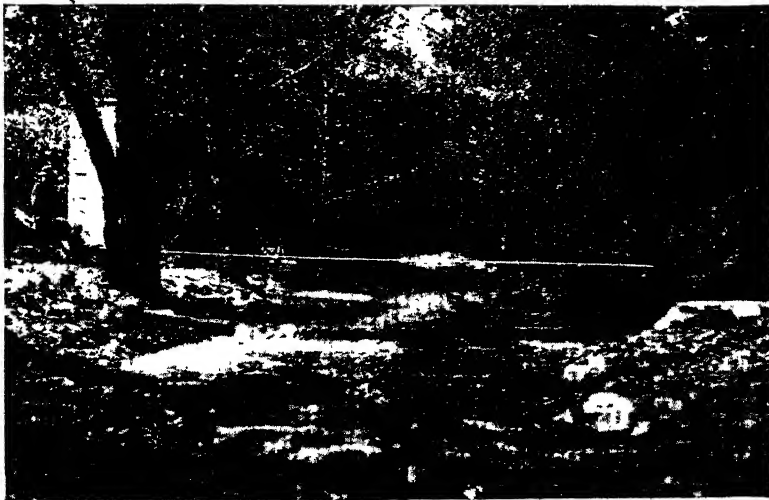


FIGURE 35.—Arroyo Seco Creek, undamaged by storm run-off from forest-covered watershed adjacent to the burned area. White line shows high-water mark of the New Year's storm. The water, being clear and controlled, was harmless. Compare with figure 34.

at least 50,000 cubic yards per square mile of burned watershed during the storm.

In the unburned watersheds, however, erosion debris caught by reservoirs of the experimental forest amounted to only 52 cubic yards per square mile. Erosion measurements from Arroyo Seco were not obtainable, but forest officials reported that the high water of that creek was practically clear and that the small amount of silt which it carried came directly from the gulying of a newly-built highway in the canyon. The condition of the creek bottom after the storm (fig. 35) verifies this observation and indicates that erosion rates in the Arroyo Seco must have been very similar to those in the San Dimas area.

### Forest Fires Must be Prevented

These records show that removal of the forest cover by fire increased the run-off rate of the heavy New Year's storms more than eight times the normal, and accelerated the rate of erosion nearly a thousand times, raising it from a trifling and completely harmless amount to quantities of enormous destructiveness. The La Crescenta burn was only 7 square miles, but in Los Angeles County alone there are 1,300 square miles of mountain area subject to fire and capable of building up disastrous floods. A considerable amount of developed property in the county has been safeguarded by dams and other costly flood-control structures, but outside the protected sections property to the value of \$300,000,000 is still menaced by fire and flood.

Leading engineers of southern California have joined with foresters in the following conclusions:

(1) The native brush cover in the mountains of California affords a natural control against excessive run-off and destructive erosion.

(2) The La Crescenta disaster resulted from denudation of the watershed by the November fire, rather than from the heavy rainfall.

(3) The continued effectiveness of flood-control reservoirs requires the prevention of excessive debris deposition therein; this can be economically accomplished only by a good cover of vegetation on the watersheds.

(4) The total benefits deriving from the natural cover of southern California mountains are such that no reasonable expense should be spared to protect that cover from fire.

C. J. KRAEBEL, *Forest Service.*

**F**OREST Removal Affects Local Climate and Growing Conditions Any modification of climate caused by the removal of the forest is of chief interest to man through its effect on the vegetation which follows the forest, particularly that part of the vegetation ultimately used for food or for construction. On lands unsuited for agriculture it is the second-growth forest—the source of our future wood supply—which must survive the local climate as modified by the removal of the original forest.

### Comparison Between Wooded and Denuded Areas

Studies made by the Allegheny Forest Experiment Station in the woods and in cut-over areas nearby show to what extent the climatic agencies which profoundly affect the growth of vegetation, such as

light, wind, moisture, and temperature of air and soil, may be modified in restricted localities by removing the original forest.

Degree of light intensity is the most obvious difference between a forested and treeless area. The extent to which sunlight is screened off by the tree tops depends, of course, upon the age and species which make up the forest. Rarely, however, will shade by itself prevent the establishment of tree seedlings. On the other hand, lack of shade in a cut-over area may cause the soil to become so hot and dry that young seedlings cannot survive. Soil-surface temperatures as high as 150° F. have been recorded in the cut-over areas when surface temperature in the woods nearby was less than 100°.

Such extreme soil-surface temperatures usually occur when the air temperature is high, and air temperature is usually higher in the cut-over areas than in the woods. While maximum air temperatures alone seldom cause death or injury to tree seedlings, they do result in greater transpiration from leaf surfaces and in greater evaporation from the soil. As a result, the plant must draw water more rapidly from a soil that is becoming increasingly dry. Eventually the demand exceeds the supply and the plant dies.

Soil moisture must, of course, be replenished by some form of precipitation and, whether or not the forest affects precipitation over wide areas, it certainly affects the amount of water which reaches the ground within itself. Studies by this station have shown that on the average about 15 percent of the precipitation is intercepted by the tree crowns. This is, however, more than offset by the decreased evaporation from the soil in the woods and the readier penetration of the precipitation in forest soil. Furthermore, the far greater run-off of precipitation in the open causes a corresponding increase in soil erosion.

Both evaporation and soil moisture have been measured simultaneously in the open and in nearby woods during a 6-month period. The soil in the woods at 6 and 12 inches below the surface had on occasions twice as much moisture as that in the adjoining cut-over area, and evaporation in the woods over a period of 6 months was only 63 percent of that on the adjoining cut-over area.

Evaporation is retarded in the woods by decreased wind movement. At one woods station used in this study, wind velocity dropped from 3.0 to 1.6 miles per hour in May after the leaves came out; above the tree tops the decrease was from 11.6 to 8 miles per hour from April to May. Because this modification of wind velocity benefits adjoining cleared areas or fields, trees as windbreaks have become a necessary part of agriculture in some sections of the United States.

A decrease in wind velocity due to the presence or absence of a forest will in turn modify air temperature and minimize the effect of extreme winter temperature. Minimum air temperature may be in itself a critical factor in the death or survival of vegetation. For a period of 1 year the minimum air temperatures in the woods and in an adjacent cut-over area were compared. During this period the mean minimum was lower in the open than in the woods every month in year, with an actual minimum for each month of 8° or 10° F. lower. On one occasion vegetation surrounding the instrument shelter in the open was killed by a late June frost, but there was no evidence of frost damage in the woods nearby.

Another station was located in a "forest pocket" on a cut-over area which, until a few years ago, was heavily forested. The earlier pres-

ence of dense woods was evidence that minimum temperatures here were never critical before the tract was logged, even though they were lower than in the immediate vicinity. Since the cutting, such extreme minimum temperatures have occurred here during the growing season that the young trees coming up on the site have repeatedly been damaged by frost. It is now possible that this area will remain for a long time without a vigorously growing young forest because of the complete removal of the old forest.

### Partial Cutting Suggested as a Remedy

It has been learned by actual measurements that even in a very open forest the various factors which, when combined, make up the climate of that locality will be less extreme than in totally denuded areas in the same vicinity. Hence, if the best all-round growing conditions for a future timber crop are to be maintained, it is apparent that the forest should be only partially removed. The rather open forest which results from this type of cutting will certainly have a favorable influence on the local climate.

O. M. WOOD, *Forest Service*.

**F**OREST-TAXATION Reforms The burden of taxation upon any group or any person is the result of two factors: (1) The total amount that must be raised by taxation, and (2) the methods by which this amount is distributed among the taxpayers. The amount is fixed when the appropriate legislative body, State, county, or town, determines the functions to be performed by the government and the cost thereof. The second is a matter of equitable distribution, involving methods of taxation and the effectiveness of tax administration.

Taxation of American forests is principally in the hands of the States and their local subdivisions and is imposed chiefly through the property tax. If the taxes borne by forest property are burdensome, the cause must be either that the total tax levies are heavy or that forest property is discriminated against in the structure or administration of the taxing machinery. Giving full recognition to such unfair discrimination against forest property as does exist, the investigations of the forest taxation inquiry clearly indicate that the predominant cause of heavy timber taxation today is the heavy cost of State and local government.

The cause of next importance is faulty administration of the property tax. The theory of the property tax is beautifully simple—distribution of the cost of government in proportion to the value of taxable property possessed by each contributor. In its operation, however, the American property tax has developed defects so serious as to call down the reproaches of virtually all tax students, at home and abroad. Assessment is the heart of the property tax, and it is chiefly the imperfect functioning of assessment that has made the property tax a farce in so many places. In almost any rural district, can be found parcels of property assessed at 2 or 3 times their true value, while others get off at a quarter or less—and some escape the assessor's notice entirely. Obviously, to the extent that assessment fails, the

property tax becomes a travesty of justice, and there is evidence that forest property is frequently thus discriminated against.

### Remedial Measures Available

The heavy cost of State and local government and the imperfect administration of the property tax thus furnish the principal causes of the unduly burdensome taxation under which forest property in many parts of the United States is suffering. For the first cause the remedy is obvious—reduction of the cost of State and local government, particularly in the forest regions. For the second, reform of assessment, as well as improvement in other phases of property-tax administration, is indicated. Limitation of space does not permit detailed discussion of these remedies. Appropriate measures are available, however, whose adoption promises good results.

Reforms along these lines are not confined to owners of forest property. If those who are seeking less burdensome forest taxation look merely for some special device to shift the burden, the natural opposition of all other groups is encountered; it is forest-tax reform against the field. But all taxpayers are sufferers from the basic causes which make forest taxes heavy. And, when all taxpayers see this and work for the clearly indicated remedies, results will come.

Successful attack upon the forest-tax problem along these lines would go a long way toward its solution. But not quite the whole way. There is a third ground of complaint, arising from the inherent nature of the property tax, which affects forestry in particular. This is a technical matter, and it will be sufficient here to state the conclusion that the property tax, by discriminating against any use of land which involves deferment of income, tends to increase the area of land that cannot be used economically, under private ownership, for growing forests.

This reference to deferment of income is not intended to obscure the importance of progress toward organizing forests so as to produce a regular annual income. When such condition has been attained, forestry suffers no peculiar disability under the property tax, and there is no special forest-tax problem. But the annual-sustained-yield forests would still suffer, with all other classes of taxable property, the adverse effects of taxation resulting from heavy costs of government and faulty administration.

### Proposed Methods of Forest-Tax Reform

Escape from the inherent discrimination of the property tax against the use of land for growing timber must be sought in tax measures relating especially to the forests. Past experience with such special forest-tax legislation has not developed a sound plan. Therefore the forests taxation inquiry, after a searching study, both theoretical and factual, has formulated and recommended three practicable methods of modifying the property tax. These plans are based, it is believed, on correct principles. They are fully described in a comprehensive report of this inquiry.

It has been suggested that the solution of the forest-tax problem requires (1) reducing or at least limiting the cost of State and local government, (2) perfecting the assessment of the property tax, and (3) providing some modification of the property tax which will adjust

it to the peculiar nature of the deferred-yield forest. Either of the first two reforms would accomplish its full effect whether the third were adopted or not. The third reform, on the contrary, while doubtless worth securing by itself, would be of limited usefulness, and might even fail entirely of beneficial results, if nothing were accomplished in the way of reducing governmental costs or enforcing the strict observance of sound assessment methods. It should always be remembered that no special forest-tax plan is to be regarded as the solution of the forest-tax problem. It is simply one—and probably the least important one—of the three parts which make up the whole program of forest-tax reform.

FRED ROGERS FAIRCHILD, *Forest Service.*

**F**ORESTRY Extension Work Aids Farmers to Earn Profits from Woodlands Through a broad program of education and practical assistance, farm-woodland owners have been aided in solving their numerous forestry problems, which range from reclaiming eroded land and thinning young stands of trees, to cooperative marketing of timber, fur, and other products.

Farmers own approximately 150,000,000 acres of woodland and produce enormous quantities of timber products for commercial and home needs. Because of lack of information regarding forestry practices applicable to farm forests, thousands of acres of valuable timberlands have been cut without regard to conserving the stand or to growing another crop of trees, or wildlife. In some sections stripping the land and degrading the stand by removal of the better trees have left cut-over lands of little value and without prospect of another timber crop for many years.

To assist farmers in meeting this situation, the State extension services, with the cooperation of the Federal Extension Service and Forest Service, are carrying projects in farm forestry. The Federal Extension Service cooperates with the States in the employment of extension foresters, who serve as project leaders. During the past year 33 States and 2 territories employing a total of 39 extension foresters carried on forestry programs with farm owners through county agent organizations. Demonstrations in the woods (fig. 36), meetings, and many other educational means have been used to assist farmers in their adoption of improved timber practices and to encourage them to handle their woodlands on an economic basis that will fit in with good farm management and wildlife conservation. Invaluable cooperation has been given by State forestry departments, experiment stations, and other public agencies and by private agencies.

The farm woods have been an important factor in helping farmers to meet their timber needs and to supplement the farm income. During the present emergency farmers have used their woods as a staff to lean on when other crops have failed to produce an adequate cash return. Although timber markets have been at a low ebb, much has been accomplished in assisting farmers with the marketing of farm-timber products. Marketing problems have been studied by extension foresters. Lists of buyers and marketing reports have been issued, marketing activities have been organized, and literature on marketing methods has been distributed. Assistance has been given in the coop-

erative marketing of pulpwood as developed with groups of farmers in Virginia and North Carolina. The cooperative marketing of Christmas trees in New Hampshire has been a profitable venture for farmers. Encouraging of industries and schools to use wood as fuel has led to increased sales by farmers. Forward steps have been taken in Connecticut through a study of markets and the establishment of standard grades for firewood.

The production and sale of maple sugar and sirup products has been an important line of work in New Hampshire, Vermont, New York, Ohio, and other producing States. The adoption of standard grades of maple products and the use of proper labels have been urged by extension workers, and have been accepted by many producers.



FIGURE 36.—A timber-thinning demonstration on a farm in Virginia. The use of proper cutting methods to provide timber products for the farm and to maintain the productiveness of the woods is an important phase of farm forestry.

### Thinning, Weeding, and Pruning

Improvement of farm woods through thinning, weeding, and pruning has been a project in 22 States. The economic aspects of this work have been emphasized. Assistance in woodland management has been given on approximately 9,000 farms, involving more than 898,000 acres of woodland. Many of the operations on these lands now serve as demonstrations in the community. The construction and repair of buildings with timber cut from farm woods have been reported by 1,042 farmers. Other work of similar type, such as saw filing and improvement of small sawmills, has been progressing in Pennsylvania and North Carolina.

The farm woods have been an aid in the conduct of relief activities such as supplying work and fuel. In one State a firewood relief project was organized. Approximately 25 towns followed plans for using farm woods to furnish labor and fuel for men on relief rolls. The program, which was started as an extension project, has been taken over by the State relief agency. In other regions assistance has been given in barter deals in which farmers traded corn for fence posts. In some sections firewood has been used as a medium of exchange.



### Forest-Tree Planting

Forest-tree planting is the most widely accepted project in farm forestry and has been carried on to some extent in all of the 33 States and 2 Territories having extension foresters. During the past year approximately 22 million trees were distributed to farmers by the State forestry agencies. A large percentage of these trees were planted through the assistance of extension foresters and county agents. Planting demonstrations, general meetings, extension schools, circular letters, and bulletins have been used to spread information on forest-tree planting and to give a clearer understanding of its problems.

The States of Pennsylvania and New York continue to lead all others in the number of trees planted on farms with approximately 4,500,000 trees being distributed in each State. In the Midwestern and Plains States the protection of farmsteads and crops from severe winds, dust storms, and "blow-outs" in fields, is an important problem. Interest has been maintained in these sections, but fewer trees have been planted because of reduced farm incomes. Nebraska has continued to lead other States in its territory with 3,231 farmers making windbreak plantings. The establishment of windbreaks for the protection of livestock and to provide cover for desirable wildlife is a new feature of the Nebraska program. Another type of work which has attracted interest is the establishment of windbreaks in California to protect citrus crops. Windbreaks as a factor in economical production are gaining in favor in that State. Puerto Rico stands out prominently with a record of 2,083,844 trees distributed to farmers for wood production, coffeetree shade, and establishment of windbreaks for grapefruit orchards. Other kinds of plantings that are gaining considerable headway are: Slash pine for turpentine and pulpwood production, now under way in Georgia; black locusts on gullied farm lands, now being planted quite extensively in Tennessee and several other States. The stock used by farmers for forest planting was for the most part supplied by State forestry departments. Rapid advancement in this work can be expected as the result of the emergency conservation program in erosion control which is now in progress in a number of the central Mississippi Basin States.

Interest in 4-H forestry has been maintained on a satisfactory level. During the year a total of 15,489 club members, or 11,553 boys and 3,936 girls, took part in such work as tree identification, woodland judging, tree planting, timber estimating, and woodland improvement.

Junior forestry camps for 4-H club members and leaders have been held in several States. Also short courses for 4-H members and others interested in forestry have been used to stimulate practical pursuits and leadership.

W. K. WILLIAMS, *Extension Service.*

### FORESTS Vital to Social and Economic Welfare of Many Communities

The forests have played a vital role in the history and progress of the United States. The wealth, tradition, and spirit of many of our States are largely grounded in their forest wealth.

One-third of the land area of the United States is forest or potential forest land. In the rehabilitation of much of this area and in the wise

management of all of it so that it may contribute its maximum value to the permanent support of industries and communities, lies the answer to some of our most pressing national problems. The forests are a renewable resource. Through wise management and use, which is the essence of sound forestry, they may be made a continuing source of wealth.

No more outstanding example of the vitally important relationship of the forest resource to the social economy of a State can be cited than that of West Virginia.

Two hundred years ago West Virginia was 99 percent forest land. Except for a few rocky cliffs and old fields where the Indians had probably raised corn, and a few hundred acres of "glades" on top of the Alleghenys, the entire State was one vast unbroken forest, one of the finest stands of timber in the country. Abundant rainfall, good soil, and altitude made West Virginia a favored land for the growing of forests. The earliest settlers, who began to come into West Virginia about this time, were real woodsmen, who knew how to get their living from the wealth of the woods. Their descendants today have inherited those sturdy qualities that living in close association with the native forests have bred.

These early pioneers rapidly penetrated into all parts of the State. They made small clearings and occasional roads, their homes were hewn from the timbers of the forests, and their farms were carved out of the dense woods.

By 1840, the geographical center of population of the United States was located at Canaan Mountain in what is now the Monongahela National Forest. In 1863, when West Virginia attained statehood, the great seal adopted by the State reflected its forest background. The design showed a farmer carrying a woodsman's ax, and on the reverse was shown a wooded mountain. This seal was prophetic of the great part the forests were to play in coming years in the rapid growth and upbuilding of the State.

### Hardwood Surplus in West Virginia 40 Years Ago

Forty years ago at the World's Columbian Exposition in Chicago, West Virginia proudly assembled an exhibit of its forest wealth and claimed, with figures to prove it, that she had a greater amount of hardwood timber in her forests than any other State in the Union. Governor Wilson at the time enthusiastically declared: "I have the statistics to prove that West Virginia has more of a surplus of hardwoods than any other 10 States in the Union." A description of the State's forest resources prepared at that time said:

A thorough examination of the forests will show that nearly or quite one-half is still uncleared, and by far the greater portion of the uncleared land is still in virgin forests where the ax of man has never found its way and where the magnificent specimens of forest growth stand thickly side by side and reach a towering height which gives the forests of the State their splendid values. The splendid forests of thousands of acres of untouched timber, where nearly every kind of timber found in the North American Continent may be seen, where trees grow to such size that ordinary methods will not suffice to handle them, and where the forests are so thick that the light of day scarcely penetrates their shade, and pathways must be cut before the ax-man can find room to work, are yielding annually many million feet of timber which has gone to nearly every country on this earth and given the West Virginia timber a world-wide reputation. No

finer oak or poplar grows beneath the sun than that which may be found in any county in the State.

That was 40 years ago.

About that time the exploitation of West Virginia's forest wealth was getting into full swing. This same report also said:

Some 10 or 15 thousand men are now engaged in one way or another in timber, lumber, sawmills, or kindred business. Great armies of choppers have, with their axes, made inroads in the woods throughout the State, and every rise brings out of every stream, however small, its quota of logs or ties or other timbers. New sawmills are building every day, new territory being opened, and it is safe to say that now the total cut of all the mills is no less than 500 million feet a year.

And note what was happening.

But a short time is required to change a forest to a farm, to bare the mountain tops and clear their sides, to turn the timber into ties, or work them into lumber or its products. Unlike some other sources of national wealth, the quantity and quality of timber of our State depends on no contingency, and its value must increase.

### Industries Based on Forest Wealth

As was said, that was written only 40 years ago. This was the period of tremendous development industrially and agriculturally, of expansion and of forest exploitation. Supported directly or indirectly by the forest wealth, industries sprang up and grew; forests and forest industries provided markets for farm products and outlets for farm labor, and agriculture expanded. In 1910 or thereabouts, when lumbering reached its peak in West Virginia, there were 1,524 sawmills in operation. The total lumber cut was more than 1½ billion feet. The population of West Virginia had increased from less than half a million in 1870 to 1,120,000 in 1910. The number of farms had increased from 39,000 to over 96,000. West Virginia ranked tenth among all the States in lumber production, and in hardwood production alone it was among the 3 or 4 leading States in the Union.

There was tremendous waste. Vast areas of the finest virgin timber in the East were logged off with the usual American prodigality. Fire ran rampant over the hills. Some of the choicest huge oak logs were cut and piled and burned to clear lands for farming; this land was in many cases poor farm land at best but ideal for timber growing. Fine logs were stripped for tanbark and left to rot on the ground. But the wealth of the woods was going into the building of a great State, and things were booming.

Today the picture has changed. Only a remnant of the virgin forests remain. Some 8 million acres of cut-over woods are reported to be in need of protection and rehabilitation; some 4½ million acres have been classed as devastated. From 1,524 in 1910, the number of sawmills in West Virginia declined to 338 in 1930. The total lumber cut dropped more than one-third; from 1,376,000,000 feet in 1910 to only 406,000,000 feet in 1930. A few years ago, one of the State's foresters reported 2,175 deserted lumber-camp sites. From 1909 to 1927, employment in the forest products using factories of the State fell off 21 percent. Farm land, as much as 100,000 acres in some years, has gone out of cultivation, much of it devastated by erosion. One of the State's leading lumbermen said a few years ago:

When we see our hillsides stripped of forests and turned into green fields, and then see the soil of the green fields washed down into the rivers, leaving the bare rocks, we cannot help a feeling of depression coming over us when we know that wealth has disappeared for all time.

## Effects of Unwise Forest Exploitation

What does all this mean to the local community? In the Horton-Whitmer community in Randolph County, W. Va., forest exploitation began about 1894 when a lumber and pulp company started operations at Horton. When the mill was operating at capacity, on a double shift, its output was about 100,000 feet per day, and some 500 persons were employed in the mill, yard, railroad, and woods. In 1926, with the timber about gone, the company abandoned their operation. Another company carried on a few years longer, but everything was shut down by 1929.

A large number of families in that community were left without employment. Even now, 5 years later, most of these people have no occupation. There is some grazing, but only a small portion of the land is suitable for farming. And with no industry going on, there is little market for farm products. The one great natural resource of the region—the timber—is gone. There is no prospect of employment for a stranded population. Over 60 percent of the families are on relief.

To cite another example, Hendricks and Hamilton, in Tucker County, are in what not so many years ago was a district of virgin forest of fine cherry, poplar, walnut, spruce, and hemlock. From 1910 to 1920, the community had a population of some 4,000 permanent residents and several hundred transient workers; and several lumber companies, a handle factory, a tannery, 6 band mills, and 2 railroad yards were paying good wages and going strong. Today only one band mill is working and it has moved to another locality. The population has dropped to less than 200 families, and of these 135 families are on relief. The prospects for the immediate future are not bright. There is at present no industry nearby where they might be absorbed.

Even as early as 1911, a report to Governor Glasscock on the West Virginia geological survey showed declining forest-products industries in many counties. Kanawha County, it was said, was long a heavy lumber producing county, and Charleston, the State capital, ranked as the center of an enormous lumber industry. Millions of feet of logs and lumber and bark came down the Elk and Kanawha Rivers every year from the late seventies until about 1904. And then many of the mills began to be dismantled and moved to other States.

## Ceremony of the Last Log

On the eve of the first Mountain State Forest Festival, held in West Virginia in 1930, a significant ceremony occurred at Mill Creek. It was the ceremony of the last log. For 50 years, great logs had been going into the mill at Mill Creek. One last log was left in the mill pond. It was floated to the incline. It went up, and in 60 seconds it had become boards, slabs, and sawdust. And then the steam went down. The band saw stood still, never to start again. The ceremony typified the death knell of a once thriving industry.

Such cases are not peculiar to West Virginia. The story of forest exploitation, of the "cut-out-and-get-out" policy, has been enacted throughout the country. Many a community, north, south, east, and west, now looks to its barren hills with the hindsight that is better than foresight and wishes it had used its forests more wisely.

But we need not despair of a remedy. The forest may be down but it is not necessarily out. With careful management, and adequate

protection, forest can be grown again. Further destruction by fires can be cut to a minimum by systematic and organized protection, backed by an enlightened public interest and support. The raw earth sores or gullies washed out on our hillsides by erosion can be healed by check dams and revegetation. The barren waste lands can be made productive once more by reforestation. And the remaining timber stands can be managed and harvested under a system which will make them permanently and continuously productive—a system which the foresters call sustained yield.

### Notable Progress Already Made

West Virginia already is making notable progress in the protection and rehabilitation of her forest lands. The Monongahela Forest in West Virginia was in a way the starting point of the whole national-forest system in the East. A series of floods, culminating in the Monongahela River flood of March 1907, which caused a loss of some \$100,000,000 in West Virginia and Pennsylvania, called the attention of Congress to the need of protecting this and other watersheds and led to the passing of the Weeks law for the purchase and forest administration of watershed areas in the East. Realization that public and private cooperation is needed over broad areas of forest to protect life and property and to assure continuity of economic and social values became widespread, and acquisition largely by purchase of more than 10,000,000 acres of land for national forests in the East followed. The Monongahela National Forest, with recent additions of 239,005 acres since June 9, 1934, under President Roosevelt's emergency forest purchase program, now has become one of the largest national forests east of the Mississippi. It has a gross area of 1,625,200 acres, of which 678,169 acres are already under Federal management.

The Monongahela National Forest protects part of the headwaters of four nationally important streams, the Monongahela, Potomac, Kanawha, and the James Rivers. In protecting these nationally important watersheds, the Monongahela Forest is performing a service extending far beyond its boundaries, a service felt throughout the Middle Atlantic States, through the Ohio and Mississippi Valleys, even to the Gulf of Mexico.

Besides developing efficient fire control and facilities for planting and management for sustained-yield forest production as a continuing source of raw material for local industries, the Forest Service has built many roads and trails, and has developed camping facilities in the highlands, preserved game and wildlife resources, and in other ways taken important steps to make the Monongahela National Forest a permanent resource for the people. The forest contains many outstanding scenic attractions, which the new Forest Service roads are making accessible, bringing many tourists into the State.

One measure to bring the Monongahela National Forest back to productivity and greater watershed value and to reforest many thousand acres of denuded land has been the establishment of a forest nursery at Parsons. This is one of the largest Forest Service nurseries in the United States. The nursery now contains 10,000,000 seedlings of all ages. It is being developed to reach in 2 years an annual production of 5,000,000 trees ready to plant.

### Destination of Future Monetary Returns

Of the future monetary returns from this national forest, 25 per cent will go directly to the counties in which it is located, for the support of county roads and schools. An additional 10 per cent will be allocated each year for the building and upkeep of roads within the forest.

Including the 1,500 C. C. C. workers engaged on improvement work, the Monongahela National Forest in 1934 was able to give full-time or part-time employment to more than 5,000 men.

As the new forest returns to the hillsides, new wood-using industries will return to the section, giving still more employment and support to the communities. And this employment will be stable and permanent, because the forests will be managed for sustained yield. The recreational and wildlife resources of the forest, husbanded by careful management, will bring other new business to the section.

Thus the Monongahela National Forest is contributing, and will contribute to a much larger extent in the future to the development of a permanent, sustained, and prosperous community life. Nearly 150 national forests, scattered throughout the United States, will similarly contribute to local and national welfare.

The ceremony of the last log was symbolic of the end of an older era. The age of pioneering and exploitation is past—and it was a great age, but a short-sighted one. Locally and nationally, our need is now for restoration of our basic resources and for the establishment of conditions which will lead to a more normally developed American civilization—a civilization based upon permanence, upon stabilized communities and industries, upon planned and wise use of our resources and wealth. In this national program for social and economic reconstruction and rehabilitation, intelligent and planned use of our forest land must play an important part.

F. A. SILCOX, *Forest Service.*

**F**RUIT Darkening Can be Prevented by New Process      The tendency of many fruits and vegetables to darken at freshly cut surfaces is well known. Slices of apple, for example, by the time they have been left in the air long enough to dry, are usually a deep brown. This is a serious loss to the fruit drier, because such dark-colored products are not received well on the market. It is impossible to prepare from them an article of food which even remotely resembles the original fruit in respect to color.

Only one method has ever been applied which satisfactorily prevented this discoloration of the cut fruits while they were being dried. This consists of treating the freshly-cut fruit with sulphur dioxide (the gas evolved from burning sulphur). The fruit dried after sulphuring has a good color, but retains considerable amounts of the gas. Its export to foreign countries is restricted, since the food laws of many European nations do not permit food to be sold which contains more than a very small amount of sulphur dioxide.

Research was begun recently by the Bureau of Chemistry and Soils with the object of finding a satisfactory method of preventing the discoloration of the cut fruit (while it was kept or being dried) which

could replace the sulphuring process. The investigation started with a study of the enzyme reactions that caused the darkening of cut fruits. It was successful in producing these reactions in the test tube where they could be investigated very thoroughly. As a result it appeared that several classes of substances ought to possess the property of inhibiting the discoloration. Of these, the great majority were poisonous, but one class seems to be harmless, because it occurs in many foods. This is the class of sulphhydryl-containing amino acids and peptides, typified by glutathione and cysteine.

Experiments with these substances were made on apples of a variety which darkens rapidly when cut (Paragon). The results showed that only very small amounts of these substances were necessary to completely inhibit the darkening of the apples.

The application was simple; the sliced apples were sprayed with a very dilute solution (0.1 to 0.25 percent) of the chemical and then placed in a drier where they were handled as in an apple-drying plant.

In technology these chemicals are as yet rare, although if there were any great demand for them they could probably be made cheaply enough. The investigators knew, however, that a substance related to those with which they had experimented is often found in pineapple juice. The next step was therefore to spray the fruit with pineapple juice which contained this substance. The effect of the pineapple juice was weaker than that of the chemicals, but the result was quite satisfactory.

Fruit dried after spraying with pineapple juice is, of course, covered with a thin film of dry residue from the juice. This does not seem objectionable but it may be avoided by first fermenting the juice, removing the yeast and alcohol, and using the greatly purified liquid in the spraying process.

Another application of this finding is that cut-up fruit, such as apples, apricots, bananas (if they are not too ripe), peaches and probably many others can be stored in the cold for as long as 24 hours without turning dark if they are immersed in pineapple juice or if a small amount of one of the chemicals mentioned is added to the juice which covers them. In the event that the pineapple juice is not already acid a little lemon juice should be added to it, since the darkening is more easily prevented in acid solutions.

A. K. BALLS and W. S. HALE,  
*Bureau of Chemistry and Soils.*

**F**UR Scarcity Through Overtrapping Impends; Conservation Needed Not long after Columbus landed on the western shores, the traffic in North American furs began. Since that time it has continued until the fur resources of the country have been shamefully exploited. The persistence of any species in the presence of the almost overwhelming forces that tend toward its extermination is a striking natural phenomenon, and so far as the layman is concerned it completely conceals the decrease that is in reality taking place, creating the impression that there is no present or threatened danger of extreme shortage. It seems unreasonable to believe that the people of this country are not interested in perpetuating our valuable resources in fur animals, but very few seem to realize that the restoration and conservation of the fur

species are as much matters for their concern as is the preservation of game, forests, and other natural resources. And not all who recognize that the supply of American raw furs is in jeopardy have a clear conception of the implications of the existing situation.

The total annual catch of fur animals in the United States was at one time conservatively valued at \$65,000,000, which was greater than Canada's \$18,000,000 and Soviet Russia's \$35,000,000 catch combined. There are various reasons for the United States appearing as so large a producer. The great Mississippi River Basin is, as it always has been, an ideal section for wildlife, with ample cover, unfailing water supply, and plenty of food. Skunks, muskrats, and many other fur animals are found there in extremely large numbers. Although for several generations trapping has been carried on throughout the entire Mississippi Basin, in some parts of it for three centuries, the smaller fur animals in some parts have done well, chiefly because of their fecundity but also because their larger natural enemies have been, for the most part, exterminated in the region. Another reason for the great annual catch of American furs has been that there are more trappers here than in many other countries. The population of the United States is greater per square mile than that of Canada or Siberia, and the trappers are well equipped for their work in woods and waters.

#### Fur Decrease Causing Apprehension

Many years ago a decrease in the fur supply was indicated by the smaller relative numbers of the more valuable pelts reaching the markets, including marten, fisher, mink, and beaver. Now, the decline in the quantity of fur pelts of all kinds is causing uneasiness and apprehension among fur merchants throughout the United States and Canada. Twenty years ago the periodic decreases might have been attributed to destruction of forests by ax and fire, indiscriminate drainage of swamp land, and encroachment of civilization. The isolation that once afforded protection to many fur animals has been ended by the recent development of the automobile and airplane. The constant decline during the past decade, however, is directly attributable to overtrapping and to the staging of so-called "vermin" campaigns for destroying fur animals that obtain part of their food from birds classed as game. Another factor not without significance is the indifferent attitude of many State game commissions toward the protection of fur animals.

It is clear that the present system of fur-animal conservation has not proved effective. The responsibility of conserving and protecting the various fur species rests chiefly with the States, but the problem is national in scope, and the seriousness of the situation calls for a coordinated Federal policy based on scientific findings. There is hope—through cooperative effort of Federal and State agencies, the fur trade, and the general public—that at least a part of this wasted heritage will be restored, thereby assuring a continuing natural supply of fur animals, with permanent occupation for trappers and for those engaged in manufacture and the many ramifications of the fur trade.

#### Need for Protection of Breeding Stock

There can be little doubt that when the fur business regains its normal status in American industry it will face a marked shrinkage in the supply of American raw furs. There would follow, if experience means



anything, a price increase that would send every farm boy to the village for more and more traps. And then there might ensue a period not merely of scarcity but of actual lack. It was so with the buffalo; it was so with the passenger pigeon; it will be so with certain fur species—unless the fur trade itself takes a hand in protecting the breeding stock, and unless coordinated efforts, Federal and State, are made for conservation.

FRANK G. ASHBROOK, *Bureau of Biological Survey.*

**G**AME as a Farm Crop Emphasized by Agricultural Adjustment      The reduction of planted areas in the United States has emphasized anew the possibilities of game as a farm crop. Millions of acres of submarginal land have been retired from production, and replacement crops are being sought for the areas that formerly contributed to farmers' surpluses. Game management under these conditions offers itself as an opportune side line to general agriculture.

The sale of hunting privileges has proved practicable in various parts of the United States. In Texas landowners licensed to sell shooting rights have charged as much as \$4 a day, or 25 cents an acre under leases; and in Ohio 28 farmers on an 11,000-acre area under central management realized a revenue of \$500 during the fall of 1931 by issuing 200 hunting permits. Similar practices have been followed in other States, and the farmers have realized additional profits by providing hunters with meals, lodging, and various services.

The prospects for encouraging the increase of wildlife—for profit as well as for general enjoyment—have thus seemed so important that the Bureau of Biological Survey has prepared Farmers' Bulletin 1719, *Improving the Farm Environment for Wildlife*, and has mimeographed recommendations on planting for wildlife in the Corn Belt and in the Cotton Belt. It has also prepared exhibit material for use at agricultural expositions and sportsmen's shows.

Two factors in increasing the abundance of wildlife, the Bureau has pointed out in its publications, are of essential importance—cover and food. Both require special consideration by the farmer who wishes to develop the wildlife on his premises. Food, of course, is indispensable, but cover must receive first attention.

Wildlife cannot persist on land without adequate shelter from enemies and protection for nesting. For the majority of the small forms of wildlife, cover means low, dense vegetation, some of which should be tangled, or stiff and thorny, so that in time of need the pursued can dive into it to escape the pursuer. Weedy fields, for instance, provide fairly good concealing cover, but they are much improved for wildlife by the presence of rose or berry patches, plum thickets, or honeysuckle tangles.

#### Uses of Planting to Improve Cover

Planting to improve cover can well be made to serve a double purpose by using food-producing vegetation, and a triple use by carrying it on where erosion control is needed. Greenbriers or catbriers, blackberries, dewberries, grapevines, Virginia creeper, and Japanese honeysuckle—to mention a few examples—have a threefold usefulness—as soil binders, as food producers, and as cover. Choice of plants will, of course, depend on their suitability for particular regions.

The increase of game cannot be achieved without the expenditure of effort on the part of the farmer, but the efforts are more than amply repaid, and the necessary information on methods can readily be obtained from the Bureau of Biological Survey or other agencies. Game management also creates conditions that attract other desirable forms of wildlife, beautify the farm, and add to the pleasures that come from the presence of birds and other living things. Besides adding a few dollars to the income and utilizing areas retired because of the necessities of agricultural adjustment, game management thus provides for an enrichment of farm life.

H. P. SHELDON, *Bureau of Biological Survey.*

**GAME Management and Forest Protection Are Related Tasks** Many professional foresters, formerly concerned almost exclusively with timber production, now realize that game and fur bearers are also valuable products of forest lands and that the forest fauna constitutes an important national resource. This realization is an important development in the history of wildlife in the United States. At the time of the discovery of North America, large and small game in abundance ranged throughout the length and breadth of the continent, but with the clearing of forests for farms and the occupation of grasslands for agriculture or grazing, the animals disappeared or resorted to the fast-diminishing forests that remained.

As the land was cleared for cultivation in the East, the logging process, taking about all of the merchantable timber, extended successively from area to area nearly throughout the region. The removal of the forest canopy, however, has resulted in a growth of small trees, berry-producing shrubs, and other vegetation that affords tender browse within easy reach of deer, fruit for bears and other wildlife, and sustenance for rabbits and wild turkeys. The forest setting has thus been prepared for the restoration of these species on a scale far exceeding such game populations in the same areas in former times.

In Western States most of the game of the open country has disappeared or has taken refuge in the national forests or national parks. Elk and mule deer, for instance, forced down by winter snows in the higher mountains along the backbone of the continent, formerly migrated far out to the surrounding plains, where the snow was light and feed abundant. The winter ranges they once knew, however, are now utilized as farms or for the grazing of domestic stock, and the game must remain at the higher elevations, exposed to the dangers of cold and starvation. Thus wildlife developments throughout the country have emphasized the importance of the remaining forest areas.

### Regulation of Game Abundance

Experience has shown how readily game can be restored where food is abundant, and where killing by man or by predatory animals is effectively controlled; it has also demonstrated the vital importance of checking numbers in time to prevent the destruction of forage. The regulation of game abundance, therefore, becomes an important part of the routine of forest management. Definite plans must be based on

field studies of numbers and game range-carrying capacity, with due consideration for any domestic stock or agricultural or other possibly conflicting interests. Such game management means that the seasons for hunting, the bag limits, and the sex ratio should be fixed each year in accordance with local conditions. It also means that hunting licenses must be limited to unit areas, instead of being applicable for use almost anywhere in a particular State. Such control of licenses is imperative if the depletion of game is to be prevented in one unit area while a mounting surplus is left unchecked in another. Similar principles should be applied in the taking of fur animals, which are likely to be reduced to the verge of extermination.

Owing to varying and often complicated conditions, game management brings into prominence many local forestry problems. The suitability or carrying capacity of a forested area for game depends largely upon the stage of forest succession, and as younger timber stands contain far more small growth available as forage than do those approaching maturity, logging or thinning operations as carried on by the Civilian Conservation Corps under competent direction are usually beneficial for wildlife.

#### Effects of Overbrowsing

Deer especially, but elk, antelope, moose, and other animals, under what may be regarded as normal conditions, are dainty feeders, nibbling the leaves and tender shoots of plants of many kinds, taking a little food here and a little there. The cropped branches are rapidly renewed, and there is little or no harm to the general vegetation. But some plants, more palatable than others, are gradually killed through overbrowsing by an excessive number of animals. These animals must then resort to the less palatable plants, and the progressive destruction of foliage, often becoming apparent at first only in spots, may extend to the entire forest. Overbrowsing by game animals is often undetected by the ordinary observer until a line marking their highest reach is clearly evident. Wherever such a line is seen, it is an indication that a serious situation has already been allowed to develop. The repeatedly defoliated plant stems cease to put out leaves, and if their tops can be reached the trees or shrubs are killed or dwarfed in growth. If this process is continued, the inevitable result is starvation for the game, and this is usually accompanied by serious damage to forest reproduction. Even such small game as the various kinds of hares, rabbits, and squirrels may assume considerable importance, as these animals, especially the snowshoe hares, are subject to cyclic fluctuations, and where overabundant may become injurious to forest reproduction.

A striking illustration of the importance to both the game and the forest of disposing of surplus animals when the forage-producing capacity of a game range is threatened is afforded in the rise and fall of the mule deer of the Kaibab Plateau, in northern Arizona. This area was maintained as a refuge on which the number of deer mounted rapidly to a peak, resulting in serious injury to forest reproduction, permanent impairment of the forage supply, and disaster to the deer through starvation.

### Forest Reproduction Sometimes Threatened

In other parts of Arizona the overproduction of game has led to surpluses that threaten the forage supply and seriously injure forest reproduction. White-tailed deer in the Santa Catalina Mountains have greatly increased in recent years, and forest damage is resulting. Elk reintroduced on the Sitgreaves National Forest have become too numerous and destructive. Even the antelope, reduced in Arizona a few years ago to a point where extermination was imminent, have increased to thousands in the Coconino National Forest and adjoining territory. The competition of domestic stock with the game animals has so reduced the normal forage supply that the antelope are forced to browse on junipers and other trees as high as they can reach, leaving them completely defoliated to a sharp line such as is seen on overutilized deer ranges. On areas closed to hunting, the mounting numbers of the antelope, like those of the deer, have been coincident with the control of predatory animals, mainly coyotes, instituted primarily in the interest of domestic stock production.

The deductions to be drawn from these, and from cases that might be mentioned in other States, east and west, should have a wide application in similar forested areas. The conservation of forest game and fur-bearing animals involves principles of wildlife management and adjustment that are comparatively simple, but a well-informed public is necessary if the inertia and prejudice that tend to paralyze constructive effort are to be overcome. Both wildlife and timber are major forest resources, to be fostered in proper relation to each other.

E. A. GOLDMAN, *Bureau of Biological Survey.*

**G**RAIN Standards, Revised and New, Promulgated for the 1934 Marketing  
Revised standards for wheat, corn, barley, oats, Feed Oats, Mixed Feed Oats, rye, and grain sorghums were promulgated by the Department on March 31, 1934, as the result of a 4-year study of grain-marketing practices and of the use and application of the various United States standards for grain. New standards for flaxseed, Mixed Grain, and malting barley produced east of the Rocky Mountains also were promulgated. These revised and new grain standards were made effective under the Grain Standards Act of 1916, for the marketing of the 1934 grain crops.

### Objectives Sought in Making Revisions

The Department's investigations showed that many changes in grain production, handling, marketing, and processing practices have taken place in the grain industry since the original United States grain standards were promulgated. The revised and new standards are designed (1) to modernize the standards so that they will conform, as closely as is practicable, with present-day grain production, handling, and market practices, and with users' requirements, (2) to establish certain new classes and grades representative of users' requirements, thereby to promote definite market quotations according to quality, (3) to effect certain improvements in the requirements of the so-called "contract grades" so as to raise the level of quality represented by the

grades No. 2 and No. 3, thus to make deliveries under futures and other contracts more acceptable to grain users, (4) to impose restrictions on objectionable and uneconomic mixing, such as the mixing of durum wheat and damaged "other grains" in the so-called bread wheats, and (5) to establish new standards for malting barley produced east of the Rocky Mountains, flaxseed, and mixed grain for the use and benefit of the grain industry as a whole.

### Moisture Factor in Wheat Standards

In the official wheat standards that were in effect prior to July 2, 1934, moisture content was one of several factors for the determination of numerical grade. In hard red winter wheat, for example, grade No. 1 permitted a maximum moisture content of 13.5 percent; grade No. 2, 14 percent; grade No. 3, 14.5 percent; each of the grades No. 4 and No. 5, 15.5 percent; and any wheat containing more than 15.5 percent moisture was included in Sample grade. A car lot of hard red winter wheat, for example, which met the requirements of grade No. 1 according to the factors of test weight per bushel, damaged kernels, foreign material, etc., but which contained 15 percent moisture, was graded No. 4.

Many grain producers and shippers believed that such wheat was unjustly graded and sometimes unjustly discounted in price, under the standards in effect prior to July 2, 1934, because moisture content should not be considered as a factor of permanent intrinsic quality comparable in importance with such factors of quality as test weight, damaged kernels, etc., for the determination of numerical grade. Although moisture content is a measure of the hazards in transporting and storing wheat, it can be easily modified through mixing and drying operations.

The revised standards provide a new method for the grading of wheat according to moisture content. A maximum moisture content of 14 percent is permitted, for example, in each of the 5 numerical grades in the revised standards for hard red winter wheat. If a lot of hard red winter wheat contains more than 14 percent but not more than 15.5 percent moisture, it is assigned the numerical grade to which it is entitled according to all the grading factors except moisture, and the word "Tough" is added to the grade designation. The word "Tough" indicates that such a lot of wheat contains more moisture than is permitted in the straight unqualified numerical grades. Thus, hard red winter wheat that contains 15 percent moisture, for example, but that otherwise meets the requirements of grade No. 1 and of the premium subclass Dark Hard is graded No. 1 Dark Hard Winter, Tough, whereas wheat of the same kind and quality would have been graded No. 4 Dark Hard Winter under the old standards. Similar methods, but with different moisture limits in some cases for the special grade Tough, were adopted also for the other classes of wheat, and for rye, barley, oats, Feed Oats, Mixed Feed Oats, and Mixed Grain.

Although the price of grain is not determined by grades alone, the grades indicate qualities that command premiums or bring discounts. In the matter of moisture content the new grade No. 1 Dark Hard Winter, Tough, for example, describes the milling and storage qualities of wheat containing excess moisture but otherwise of No. 1 quality much better than did the old grades of No. 3 Dark Hard Winter or No. 4 Dark Hard Winter. These changes in the method of grading

should prove of use to grain producers and country shippers in emphasizing the utility values of such wheat.

### Restrictions on Objectionable Mixing

Experience in the use of the old grain standards showed that certain objectionable mixing practices prevailed under these standards. An outstanding example of mixing that served no useful purpose for either producers or millers, and that caused objections from foreign buyers of American wheat, was the mixing of durum wheats into hard red winter wheat within the maximum limitation of 5 percent that was permitted in grade No. 2 of the old standards. On numerous occasions when the price of durum wheat was materially lower than the price of hard red winter wheat, there was extensive mixing of this character in wheat of the commercially important grade No. 2 Hard Winter, whether for export or domestic delivery.

A study of wheat receipts in the important grain markets showed that less than 0.5 percent of the market receipts of hard red winter wheat of country origin contained natural admixtures of durum wheat in quantities greater than 2 percent, and that such mixtures were found in only a few counties in the entire hard red winter wheat producing area. These data showed plainly that the maximum limitations for "wheats of other classes" in the old standards for hard red winter wheat were greater than necessary to take care of natural admixtures, and served often as an official tolerance of objectionable mixing.

The revised standards lower the percentages of durum wheat permissible in grades Nos. 1, 2, and 3, of the bread-wheat classes, thus restricting objectionable mixing and improving the milling quality of these grades of wheat. Curtailment of this objectionable mixing practice should benefit the entire wheat industry. The mixing of durum wheats into the bread wheats, as done under the former United States wheat standards, was of no benefit whatsoever to producers, and at times was injurious to their interests, because it lowered the quality of large lots of elevator wheat below the level commonly found in country-run wheat of the same grade. The hazard of depreciated quality, therefore, was inherent always in elevator deliveries of wheat of the important contract grade No. 2 Hard Winter, for example, and under such conditions the tendency was to depress the futures price for wheat of that grade. This reacted unfavorably on the cash prices paid to farmers for country marketings of wheat, because the futures price unquestionably exerts an important influence on cash prices.

### New Grades for Oats of High Test Weight

In the purchase of oats from producers at country points, it has not been customary to pay higher prices for oats of high weights per bushel than for oats of relatively low weights per bushel, although oats having high test weight are of relatively superior value. The old standards provided no grades for oats of high test weight. Thus, oats having high test weight per bushel were included in the same grades with oats having a relatively lower test weight per bushel, and no definite current market quotations by grade for oats of high test weight per bushel were issued at the terminal markets.

A study of the market receipts of oats during the past decade showed that a material volume of market oats tested more than the 32

pounds per bushel required for grade No. 1. The Department believes that the large part of the oat crop that is of superior value according to the important factor of test weight per bushel should have definite recognition in grain inspection and marketing. Thus, the revised standards for oats provide special grades for Heavy and Extra Heavy oats. These special grades, when applicable, are made a part of the complete grade designation, as for example: No. 2 Extra Heavy White Oats, thus emphasizing by grade the superior value of such oats as compared with other lots of white oats that meet the requirements of grade No. 2 but that do not possess the premium quality of high test weight per bushel, and which, therefore, are graded and designated merely as No. 2 White Oats.

### New Standards for Malting Barley

The use of barley for malting purposes has increased materially in the United States because of the increased consumption of malt beverages and the manufacture of malt products used in malted milk, bread making, and candy making. No United States grades for barley of malting type had been established heretofore. Barley of the important commercial grade Special No. 2 Barley under the old barley standards was often entirely unacceptable for malting purposes because barley within that grade might include objectionable types of barley for malting purposes, might be of nonuniform kernel size, or might be nonmellow in character.

Barley of malting type has been sold almost entirely by sample in accordance with buyers' fancy only, and regular and definite market quotations for malting barley by grade have not been possible. At country points the barley crop usually was just "barley," so far as the producer was concerned, and in the absence of definite grades for malting barley, country buyers found it difficult to correlate country prices for barley of malting type with terminal market prices for barley of this type.

The Bureau of Agricultural Economics made a thorough study of those physical characteristics of barley that are indexes of malting quality and that lend themselves to practical application in inspection procedure, and as a result of this study new standards for malting barley produced east of the Rocky Mountains were promulgated and made effective July 2, 1934. When these standards become fully incorporated into futures trading and other grain-market practices, they should serve as a useful base for current market quotations on malting barley by grade. This market service will provide producers and country shippers with more definite information than heretofore available on malster requirements and on prevailing terminal market prices for barley of malting type.

### The Farmer's Interest in Grades

Although the examples of grain standards revisions and of new grain standards given in this article comprise only a partial illustration and explanation of the revised and new grain standards that were made effective in 1934, they should serve to illustrate the fact that the Department is seeking constantly to harmonize the standards with market practices, to increase the usefulness of the standards as measures of quality in commercial transactions, and to effect improve-

ments in market practices through the use of equitable standards that will reflect benefits to grain producers and shippers.

Sound practical grain standards based on research and experience are of vital importance to farmers. Although market prices for grain are governed in general by the size of the grain supply and by the demand of domestic and foreign users of grain, the grain standards, nevertheless, have an important bearing on the distribution of the total market value of the grain crops among the various groups that produce, handle, store, and process these crops. The grain grades also have an important bearing on market premiums and discounts for grain of varying quality, as well as on the reflection of such premiums and discounts to the producers and country shippers of grain.

It is of importance to grain growers that the grades should represent the requirements of grain users to the fullest extent commensurate with the practical conditions of grain inspection. When grades are descriptive of and correlate with the requirements of users, widespread trading by grade rather than by sample is facilitated. This is of importance to farmers because, under such conditions, current and definite market quotations by grade are possible and keep producers and country shippers well advised at all times of market requirements and prices. Under such conditions, prices and trading practices at country points tend to follow the true course of the supply and demand situation at the terminal markets much better than when trading is done by sample only. It is also important that the grades correspond reasonably with production conditions so that an important commercial volume of grain may be comprised within each of the important commercial grades.

These principles have been adhered to by the Department in its grain standardization work and in meeting its responsibilities under the Grain Standards Act. The Department believes, therefore, that the revised and new grain standards of 1934 mark another forward step in the usefulness of grain standards and in the improvement of grain-marketing practices.

EDWARD C. PARKER, *Bureau of Agricultural Economics.*

**G**RASSHOPPER Control Accomplished Under Cooperative Program Farmers, business men, bankers, the public in general, and not a few scientists, heretofore skeptical of man's ability to combat the grasshopper menace, have had their doubts dispelled by the highly successful control campaign conducted in 1934 by the Department of Agriculture in cooperation with 18 of the Western States. In addition to demonstrating that crops could be saved from destruction by grasshoppers, it was also proved that probable grasshopper abundance could be predicted months in advance of their hatching and that very close estimates could be made of the quantity of poisoned bait needed for control. This marks a decided advance over former methods of planning and initiating control measures after the grasshoppers had hatched and started to injure crops. Such delayed action usually resulted in severe crop damage before control measures could be applied, frenzied attempts to obtain bait materials, and a poorly organized campaign which was only partially effective.



Beginning in 1930 and continuing through 1933, grasshoppers, benefiting by favorable weather conditions, steadily increased over the Great Plains States. During this period sporadic attempts at control were made by individuals and counties, and in 1932 an effective campaign was conducted in Minnesota, where the State appropriated \$250,000 for control operations; but no unified effort was made for control over the entire region, and as a result each year showed a larger area infested and greater crop losses.

Starting in 1931, the Bureau of Entomology in cooperation with State entomological agencies conducted fall surveys which have proved remarkably accurate in predicting grasshopper abundance the following spring. The results of the 1933 survey indicated that the worst grasshopper outbreak in the history of American agriculture could be expected in 1934, and that 15 million acres would need poisoning if crops were to be saved.

The President transmitted to Congress an estimate of appropriation for the Department of Agriculture amounting to \$2,354,893 for cooperative control of an anticipated outbreak. Congress passed the appropriation bill carrying this item, and the money was made available on March 29, 1934. The Department established a grasshopper-control office at Minneapolis, Minn., let contracts for bait materials and bait mixing, and started shipping prepared bait to the States in less than 3 weeks after the money became available.

#### State Action Undertaken

Each State desiring Federal aid in grasshopper control organized a State control committee, appointed a State leader, and prepared a petition to the Secretary of Agriculture stating its need for aid and the cooperation the State was prepared to give in conducting the campaign, and giving an estimate of the quantity of bait required. State leaders called conferences of county agents, who returned to their counties to conduct meetings in every community and township where grasshoppers were expected in injurious numbers. Thousands of such meetings were held, and as a result of this educational campaign farmers in the most heavily infested States were fully instructed in control operations.

The grasshoppers hatched from 3 weeks to a month earlier than usual owing to a remarkably mild winter and spring in the Great Plains. Hatching began late in April and early in May and was far enough advanced by May 10 for poisoning operations to be started in some States. Grasshoppers not only hatched in predicted numbers in the 8 States that were surveyed in the fall of 1933, but also appeared in destructive numbers in other Western States, and by June Government poisoned bait was being shipped to 18 States.

Nearly all the grasshopper bait furnished by the Government was mixed dry in mills and shipped in cars to the county where it was to be used. Approximately 10 gallons of water was added to each 100 pounds of dry bait before it was scattered. A total of 78,370 tons (3,900 carloads) of bait was furnished by the Government to the following States: Arizona, California, Colorado, Idaho, Iowa, Kansas, Michigan, Minnesota, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Wisconsin, and Wyoming.

From the beginning excellent kills were obtained with this bait. In most areas cultivated crops were the only source of green food, because of the drought, and grasshoppers hatching around the edges of crop fields invaded them within a few hours after emerging. Since crops lacked moisture for rapid growth, they did not have sufficient vegetation to delay the invasions. As a result the young grasshoppers advanced into the fields several rods each day. Hatching continued on warm days over a period of several weeks, with new hordes invading crops after each hatch. Under such conditions control could be obtained only by repeated applications of bait around the field margins and for several rods into the fields.

### Campaign Generally Effective

In spite of these difficulties, crop losses were held to a minimum and there was no sign of letting up until early in July. By that time it became apparent over much of the area that the severe drought had injured crops to the extent that few of them would be worth harvesting. With no crops to save, some farmers gave up, but even then the majority showed surprising determination and continued the campaign in order to prevent an outbreak the following year. In all areas where crops were worth harvesting, the campaign was remarkably effective. Notwithstanding adverse conditions for poisoning and the presence of more grasshoppers than in any previous outbreak, these insects caused no serious crop losses in any of the States.

Throughout north-central Montana, which suffered extensive losses from grasshoppers in 1933 and which was the most heavily infested area in the Great Plains in the spring of 1934, weather conditions were favorable, and the best grain crop in years was produced with only slight injury from grasshoppers. Farmers in this area generally agree that it would have been entirely devastated by grasshoppers if control measures had not been employed. Good crops were also grown in the Red River Valley in North Dakota and Minnesota, where lack of control measures would have resulted in total destruction of crops on hundreds of farms. No accurate estimate of the value of crops saved from destruction by grasshoppers in 1934 can be made, but control leaders from 18 States in conference at Denver, Colo., at the close of the campaign stated that it would exceed \$50,000,000. If drought conditions had not destroyed crops after they had been saved from grasshoppers, the saving would have been several times this figure.

The success of the campaign is due largely to the spirit of cooperation and whole-hearted enthusiasm for the work displayed by all persons and organizations connected with it. Railroads granted reduced rates and other concessions which enabled the Government to save several hundred thousand dollars, which was used in the purchase of materials instead of in freight payments. The agricultural departments of many of the railroads furnished men with experience in grasshopper control to aid the State extension services in educational work. Elevator companies provided free storage of bait at numerous rural points, and bran producers frequently sold to the Government when their regular trade was demanding more than could be supplied.

As a result of the 1934 campaign, crop losses from grasshoppers for the current year have been largely prevented, and grasshopper populations have been reduced to the lowest point of the last 4 years.

J. R. PARKER, *Bureau of Entomology and Plant Quarantine.*

## HAMS Stored in Tight Cloth Bags Keep Well for Use in Farm Home

Wrapping smoked hams in parchment paper and then storing them in fly-proof muslin bags proved to be the most desirable method when hams are to be kept for several months at ordinary air temperatures, according to the results of a 3-year test just completed at the Animal Husbandry Experiment Station, Beltsville, Md. The method prevented infestation from skippers and excluded part of the air and light that hasten development of rancidity in the fat. Most farmers who butcher hogs during cold weather for their year's supply of meat are faced with the problem of keeping the meat sound and palatable through the summer without the use of refrigeration. As a result, farm-stored hams often deteriorate in quality or are lost entirely through infestation of insects.

The general quality of these wrapped and bagged hams (fig. 37) was not consistently different from those that had been hung up unwrapped and unbagged nor from those that had been shaded with black cloth, or bagged and painted with various protecting preparations such as lime or yellow wash. There was some difference in shrinkage in storage



FIGURE 37.—Method of wrapping a smoked ham in parchment paper (right) preparatory to bagging. The ham shown at left has been bagged and painted with yellow wash to prevent infestation by skippers.

and in the results from the cooking tests conducted with some of the hams, but the differences were not material except for the damage caused by skippers in the unwrapped hams.

Skippers got into the storeroom in spite of all precautions and infested the hams, a fact which demon-

strated the advantage of protecting the individual hams even though the storeroom was supposedly flyproof.

### Results of Various Methods of Storing

Some of the 210 hams used in the investigations were coated with a mixture of pepper and molasses. These coated hams possessed a flavor after aging that was considered to be sweeter and slightly more pungent than the others. There was, however, some loss caused by skippers; except for that fact this method would be a highly satisfactory one for those persons who like the flavor of pepper.

Other hams were buried in crushed rock salt, in wood ashes, and in oats. All these lots were musty in flavor and undesirable. The meat buried in crushed rock salt absorbed too much salt during storage and the lean portion became undesirably dry and tough. Storing smoked meat in wood ashes, salt, or oats is apparently not satisfactory in a climate as humid as that of Washington, D. C., and vicinity.

Hams hung unwrapped in a dark, imperfectly ventilated home-made meat-curing box, such as is frequently used for curing meat in the South, aged as satisfactorily as those hung in the open storeroom. No skippers gained entrance to this box, though that danger was always present when the lid was raised for an examination of the meat.

Hams made airtight by the use of heavy coatings of paraffin or stored in rubber bags all spoiled. Most of this spoilage was on the surface, but the meat was considered unfit for use.

Mold developed on all the hams regardless of the method of storage. During damp weather the growth was extensive and during dry periods much of it disappeared. The least mold was found on the unprotected hams hung in an open window where the air circulation was greatest. Mold did not damage the flavor of any of the hams except those that were buried in ashes, salt, or oats. In those cases a musty, moldy flavor permeated the entire cut.

All the hams used in these tests were from carcasses that had been chilled promptly after slaughter. The cold, trimmed, fresh hams were dry cured with a curing mixture of 8 pounds of salt, 2 pounds of brown sugar, and 4 ounces of saltpeter for each 100 pounds of meat. The meat was cured at a temperature of about 38° F. and 3 days' curing time was allowed for each pound of weight of the average ham. The cured hams were washed and smoked for 3 days at a temperature that did not exceed 110°. No smoked meat was wrapped or packed until it had cooled to air temperature after removal from the smokehouse.

The mean monthly temperature of the storeroom in which the smoked meat was kept ranged between 46° F. in February to 78° in July and August; the mean humidity ranged between 36 and 95 percent.

R. L. HINER, *Bureau of Animal Industry.*

**H**OGS of Danish Origin Imported for Breeding Studies in This Country Science is constantly exploring new opportunities of aiding the producer of agricultural commodities to conduct his business more efficiently and to meet the needs of a changing economy. In this connection animal and plant breeders are putting forth their efforts toward making available new types and strains or varieties that are superior in important characteristics. These efforts have included importations and subsequent studies with respect to adaptability, merit in comparison with present varieties and strains, breed improvement, and possible advantages from crossbreeding.

### Value of Production Records

For a number of years the Department of Agriculture has recognized the advantages of selecting breeding animals of the meat-producing species on the basis of performance records. It was with the needs of the industry in mind, especially for a more effective method of selecting breeding stock, that the Department together with the Iowa Agricultural Experiment Station, recently became interested in studying Danish hogs and methods under American conditions.

Since the beginning of the present century the swine industry of Denmark has shown remarkable development. That country has shown the world the striking improvement that can be accomplished by well-planned, systematic testing methods, associated with good feeding and management. Denmark's valuable background of performance records in both economy of production and quality of product caused the Department and the Iowa station to obtain a number of Danish pigs, carefully selected, for such research purposes.

The most important influence in the development of the swine industry in Denmark has been the selection of breeding animals based on detailed breeding-center, testing-station, and bacon-factory records. This method of selection, supported by good methods of feeding and management, has resulted in the very efficient production of high-quality bacon of the type known commercially as Wiltshire sides.

The breeds through which this has been accomplished in Denmark are the Landrace and Yorkshire, with the former of much the greater importance. This breed originally consisted of 15 different families, the progeny of which have been studied through the years and only the more efficient ones maintained. Today, on this basis of actual performance, only 4 of the original families are regarded as of particular importance, 2 of these, the B family and the F family, meeting with most favor.

### Landrace and Yorkshire Pigs Selected

Early in 1934 a swine specialist of the Department, representing also the Iowa station, selected in Denmark 8 boars and 16 gilts of

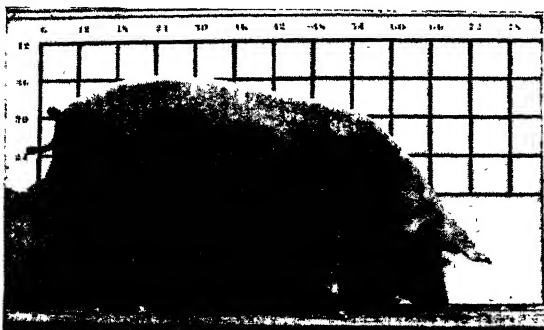


FIGURE 38.—A Danish Landrace boar, 12 months old, included in the recent importation. This boar is a grandson of Stendys Mariendal, a line of breeding highly regarded in Denmark.

the Landrace breed (figs. 38 and 39) and 2 boars and 4 gilts of the Yorkshire breed. Six of the Landrace pigs, 2 boars and 4 gilts, were from the Stabil line of breeding, Stabil being a highly regarded boar of the B family. Another group, 2 boars and 4 gilts, was from the most popular line (Stendys Mariendal) of the F family. The remaining 12 Land-

race pigs were selected to represent varied lines of good breeding. The Yorkshire pigs likewise represented some of the best breeding in the country.

The 30 pigs were assembled at Copenhagen and shipped to St. Croix, Virgin Islands, where they were held in quarantine to comply with the livestock sanitary laws of the United States. The importation was made into the United States in May 1934. After a further quarantine period of 7 days the pigs were shipped to the United States Animal Husbandry Experiment Station, Beltsville, Md., and 6 of the Landrace pigs, 2 boars, and 4 gilts, were sent on from there to the Iowa station at Ames.

Each of the pigs in the importation has a known background of prolificacy, feed-lot efficiency, and quality of product. In the investigations with these pigs, now in progress, one of the first considerations is whether the Danish lines of breeding will produce results in this country, comparable with the records under Danish conditions. In addition the studies outlined provide for comparisons with representative lines of breeding in leading breeds commonly raised in the United

States. A further phase of the program is the study of certain modifications of the Danish testing methods to determine their value for use in swine-improvement work in this country. Crossbreeding with one or more leading domestic breeds constitutes another important phase of the program. This will be done to determine the possibilities of combining the better characteristics of the foreign and domestic breeds, as they may be found to occur.

The importation was made with no thought of minimizing the merits of the American hog, but to compare these merits with those of selected strains of known efficiency from Denmark and also to combine superior qualities through crossbreeding. In view of the nature and scope of this study a number of years will be required to carry it to completion, although it is likely that it will yield interesting and helpful results in the near future.

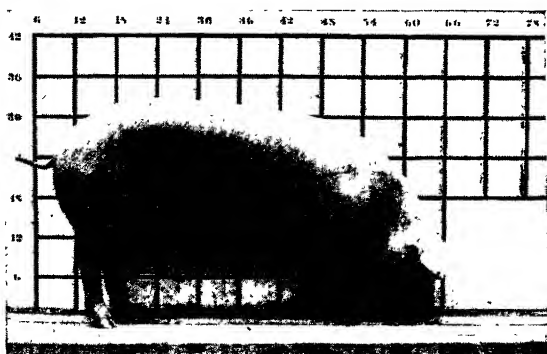


FIGURE 39.—A Danish Landrace gilt, 11 months old, in the recent importation by the Department and the Iowa Agricultural Experiment Station. The length and smoothness of side and development of ham are especially noteworthy.

O. G. HANKINS and J. H. ZELLER,  
*Bureau of Animal Industry.*

## HORSE Disease, Known as Encephalomyelitis, Yielding to Research

A disease of horses and mules manifested by nervous symptoms has existed in various sections of the United States for many decades. The affection has been called cerebrospinal meningitis, forage poisoning, blind staggers, sleeping sickness, brain fever, Kansas-Nebraska horse plague, and other names.

Contrary to former beliefs that the disease resulted from spoiled feed and a variety of other causes, research by California investigators showed in 1930 that a specific virus is responsible. At that time it was proposed that the disease be called encephalomyelitis, signifying inflammation of the brain and the spinal cord, which is the actual condition.

Since 1930 the causative virus has been found to exist, in the West, in California, Nevada, Utah, and South Dakota, and in the East, in Virginia, Maryland, Delaware, and New Jersey. In addition, the disease has been diagnosed in other States. Strong experimental evidence indicates at least two types of virus, tentatively designated as "western" and "eastern", but the outward appearance of the disease is practically the same in both cases.

Usually there are three phases of the infection (figs. 40-42). In the first, which is often unnoticed, there is a mild indisposition generally accompanied by a rise in temperature. In the second phase, distinct



FIGURE 40.—Horse in early stages of encephalomyelitis, showing drowsiness and distortion of the upper lip.

nervous symptoms appear. There is either a loss of appetite or difficulty in eating and drinking. Water often runs from the nostrils when the animal attempts to swallow. Frequently there is grinding of the teeth and twitching of the muscles of the lips, jaws, or other parts of the body. The animal may become very drowsy and stupid, the head often hanging low. In other cases the animal walks incessantly, often with a swaying or stumbling gait. Sometimes the animal becomes very excitable and lunges about.

In the third and last stage, the horse falls to the ground where it may lie



FIGURE 41.—The same horse in a later stage of the disease showing extreme sleepiness with animal leaning against the stall wall.

quietly or make running movements with the legs. It often beats its head about violently, causing bruising. The functions of elimination may be retarded. The disease usually terminates fatally in cases that reach the third stage. At some time during the course



FIGURE 42.—Animal in the final stage of collapse with body supported by stall wall and nose resting on floor.

of the disease a staggering gait, sleepiness, and a yellow discoloration of the eye membranes are almost always to be observed.

#### Course of the Disease Rapid

Usually the disease runs a rapid course and in cases that terminate fatally, death ensues in from several hours to a few days after the onset of symptoms. Recoveries have ranged from as low as 2 percent in some outbreaks to as high as 70 percent in others. Animals that survive, however, are likely to sustain permanent damage to the brain or spinal cord, a condition causing the so-called "dummy" or otherwise impaired animal.

Although research has not yet revealed definitely how the infection commonly spreads, results thus far indicate that blood-sucking insects, particularly mosquitoes, are probably an important cause. Outbreaks have been observed to be most common during the summer and early fall months when insects are prevalent. With the coming of frosts the disease tends to disappear. Outbreaks also are most common in low-lying, moist regions which are favorable to insect life. There are other possible means by which the disease may spread, such as inhaling or eating infectious material, especially if there are abrasions in the mouth cavity.

#### Methods of Preventing Losses

Pending the results of further research, the following procedure should be helpful in preventing losses from encephalomyelitis. Isolate



affected animals in screened quarters, where possible, or if not feasible, prevent insect bites by use of repellent sprays. Segregate the normal animals in similar quarters; horses not at work should be stabled during the season of insect prevalence. The use of insect repellents and nets on horses in the field is to be encouraged. Animals dead of the disease should be disposed of promptly by burning or burying deeply and the stables, sheds, or corrals used by the affected animals should be thoroughly cleaned and disinfected. A specific antiencephalomyelitis serum is now commercially obtainable and available experimental data appear to warrant its use in the prevention, as well as treatment, of the disease. The immunity induced by the serum appears to be of short duration and for that reason, to be effective, the serum treatment must be repeated at intervals.

Cool, comfortable quarters, protection of the animal against possible injury by the use of adequate bedding or slings, permitting the animal to drink fresh water at all times and supplying small quantities of succulent feed are advisable. In all cases treatment should be administered by a trained veterinarian and other control measures should be under his supervision. Unguided home treatment, such as promiscuous drenching or other administrations which may be suggested by unqualified advisers, is to be discouraged since it usually lessens the animal's chance of recovery. Failure to observe the precautions outlined may result also in a spread of the infection.

L. T. GILTNER and M. S. SHAHAN,  
*Bureau of Animal Industry.*

**I**RRIGATED Land Needs Drainage to Correct Excessive Salinity

The dissolved salts that occur in irrigation waters constitute an important cause of injury to irrigated lands.

These dissolved salts tend to accumulate in the soil and subsoil as the water of the soil solution in the root zone is absorbed by crop plants or dissipated by evaporation. Their injurious effects may operate in either of two ways; they may accumulate in the soil solution until that solution becomes so concentrated as to be directly injurious to crop plants, or with increasing concentration there may be reactions of base exchange between the salts of the soil solution and the soil itself by which the physical condition of the soil is impaired. Such reactions may cause the soil to become deflocculated and relatively impermeable to the movement of water into and through it.

There are two primary sources of the salinity found in irrigation waters. The larger part of such salinity is derived by the solvent action of water operating on the rock material of the earth's crust during the processes of soil formation. The other and smaller part comes from the earth's interior, whence the constituents rise as gases mixed with superheated water vapor. As these gases approach the surface they condense and blend with subsurface or atmospheric waters in which the salt constituents are dissolved.

These dissolved salts, whether derived from soil weathering or magmatic sources, move with the waters of solution. In the arid regions where drainage is deficient and evaporation is high they may be precipitated, as the result of evaporation, in the soil or in

sediment that is deposited in valleys by erosion. Most of the naturally saline soils of our arid regions have been formed in this way.

By similar processes soluble salts have been deposited in sedimentary soils or rocks formed during earlier geological periods. As such salt-bearing soils or rocks become exposed by erosion or penetrated by percolating waters, their salts pass into solution and thus contaminate the surface streams or underground water supplies that may be used for irrigation.

Irrigation waters that contain the least salt are those that come directly from the rain or snow that falls on watersheds of hard rocks. Such rocks when weathered into soil yield comparatively little soluble material to the drainage waters. Where the rocks of the watershed are of softer material, such as shale, the processes of soil formation yield larger quantities of soluble salts that are carried away in the drainage, whether through surface or underground channels. It is the desert areas of watersheds or drainage basins that contribute the most salt to irrigation supplies. These desert areas yield comparatively little water, but the soils are often highly saline because of infrequent leaching; and when an occasional rain falls even over a restricted area, the water dissolves the accumulated salt and carries it to the drainage stream or into some natural underground reservoir.

#### A Man-Made Source of Salinity

The sources mentioned above are the more important natural sources of salinity. There is another source to be considered that may be thought of as man-made or artificial. This comprises the irrigated lands that are located along stream channels. Some of these lands are naturally salty because the soil was deposited by the action of water containing dissolved salts, and as the water evaporated the salts were left in the soil. But when these lands are irrigated a large part of the water applied as irrigation is evaporated from the soil or absorbed and transpired by crop plants. This water that is evaporated or transpired leaves its salt burden in the soil. Not infrequently irrigation water may contain a ton or more of dissolved salts in each acre-foot, and under arid conditions as much as 2 to 4 acre-feet of irrigation water may be applied to each acre of cropped land.

Thus it will be evident that irrigated lands on which saline irrigation waters are used become potential sources of salinity in respect to the tributary streams. In order to prevent the impairment of these lands through the accumulation of injurious concentrations of salts in the soil solution of the root zone it is necessary that the subsoil be drained either naturally or artificially. It is necessary also that the quantity of irrigation water applied to the land shall be sufficient not only to supply the needs of the growing crops and the unavoidable losses by evaporation from the soil but also enough more to cause some leaching of the root zone into the drainage system.

The drainage system of an irrigated district should carry away from the root zone of the cropped land a quantity of dissolved salts at least substantially equal to the quantity carried to the land in the irrigation water. Because such a large part of the irrigation water is dissipated by evaporation and transpiration it is obvious that the

drainage water from irrigated lands should carry much higher concentrations of salts than the irrigation water if a favorable salt balance for the district is to be maintained. Where irrigated lands are located along a stream channel, water is diverted from the channel for irrigation and a part of it returned to the channel as drainage. Each successive repetition of diversion and return diminishes the volume of the stream discharge and increases its salt concentration. Thus it may be said that the irrigated land along a stream in effect becomes an important source of salinity because it increases the salt concentration even if it does not add materially to the total salt burden of the stream.

The conditions described as occurring along a surface stream occur also to some extent in respect to underground water supplies that are developed for irrigation use by means of wells. These underground supplies, if they are not to be exhausted, must be replenished by percolation from surface sources. Deep percolation from irrigated lands is one of the sources of such replenishment, and consequently it is to be expected, as it has been found, that such percolating waters convey dissolved salts into the underground reservoirs from which irrigation supplies are drawn.

C. S. SCOFIELD, *Bureau of Plant Industry.*

**L**AND to Spare—A Conservation Problem in the Lake States What to do with 60 million acres of roughly wooded, cut-over, and other wild land is the problem which is being forced upon the Lake States, Michigan, Wisconsin, and Minnesota, by ever-increasing tax delinquency. This large area, nearly half the total land of the region, stripped of its



FIGURE 43.—Most of the wild land of the northern Lake States is suitable for the long-time undertaking of forestry.

forest wealth, is in its present condition a liability rather than an asset. Faced with mounting taxes and shrinking incomes, owners

have been allowing cut-over land to revert to public ownership on an extensive and ever-increasing scale. Aside from a question of general welfare, the State administrations are faced with the problem of what to do with those orphan acres.

The Lake States have, however, been pioneers in land-use planning and are approaching the problem in a systematic and scientific way. In 1930 the Governor of Wisconsin appointed a special land-use committee to analyze the trends in agriculture, forestry, and recreation, and to recommend to the State a program of land management. A similar committee in Minnesota and several in Michigan have been at work at the same problem. A number of special studies have been made by the Lake States Forest Experiment Station at St. Paul. A very comprehensive and detailed study of the land-use problem in the 14 cut-over counties in northern Minnesota, together with recommendations for a definite program of action for each county, was made cooperatively by the University of Minnesota and the Bureau of Agricultural Economics of the United States Department of Agriculture, assisted by other State and Federal agencies. Finally, the Forest Service in its "national plan for American forestry"<sup>2</sup> made specific recommendations concerning forest development in the Lake States. As a result of these investigations a program for the future management of a part of these 60 million acres is taking shape (fig. 43).

### Decrease in Farm Area of Lake States

During the decade 1920-30 there was a 2-million-acre decrease in farm area in the Lake States with immediate prospect of further reduction in crop acreage. Even looking ahead several decades, it seems unlikely that agriculture will demand more than 3 million acres of the available wild land for intensive cultivation—a million acres in each State.

Plans for public forests, as developed up to 1932, envisioned 12 to 13 million acres of "wilderness" and other areas for recreational purposes, including nearly 4 million acres in national forests, 7½ million acres in State forests, and 2 million acres in county forests. Parks, game refuges, summer homes, etc., occupy 2½ million acres and may eventually extend to several million more, but many of these needs may be met by proper use of the public forests.

Thus the commonest forms of land use—agriculture, forestry, wildlife conservation, and recreation—may lay claim to less than a third of the available wild land in the three States.

The full significance of the problem cannot be grasped, however, without consideration of the nature of the land.

The area is one of short, cool growing seasons; mostly the soil is poor—either sandy, swampy, stony, or rough; it is usually hard to clear; there is a long haul to market; and scattered settlement has caused an unfavorable tax situation. Some very good land is to be found and a few localities excel the more settled agricultural parts of the States in fertility and future possibilities, but these are only sufficient to warrant an agricultural program looking toward the gradual transfer of scattered settlers to these more favorable areas. There is no room for an influx of settlement.

<sup>2</sup> A detailed summary of this report, entitled "Major Problems and the Next Big Step in American Forestry", has been published by the Forest Service.

From the standpoint of forest management, the area as a whole is so badly run down from overcutting and fire that a long time and considerable investment of money will be required to restore it to productivity. The lands now returning to public ownership are like a mine from which the pay lodes have been stripped, the tunnels allowed to cave in, and the workings to fill with debris.

### Land Classification and Zoning

As a first step in reclaiming the cut-over land, the State committees have strongly urged a systematic classification that will (1) guide future agricultural development by segregating the most promising crop land, (2) aid a sensible forest program by sorting out the areas most suitable for forest growth, and (3) designate preferred areas for wildlife and other land uses.

Instead of the present haphazard settlement in the cut-over area, so detrimental to economical local government, settlement must be concentrated on the better lands, enabling the residents to effect substantial savings in schools, roads, and other public services.

In spite of its run-down character most of the unused land is more suitable for the long-time undertaking of forestry than for any other use, particularly where so much land has been devastated and must be rebuilt. The sustaining power of any public-forest program is the most vital consideration. The program, soundly conceived, must set for itself a realizable goal in terms of probable future appropriations and general public support. A perfectly feasible public-forest program might include State-wide fire protection, extension of public forests, gradual public acquisition of abandoned land within these areas, and more careful management of selected tracts.

It has been estimated that reasonably good fire protection for the entire forest area can be provided at an average cost of about 4 cents per acre or a little less than \$2,400,000 per year. Two-thirds of this amount was actually provided by State and Federal Governments in 1931. On the better lands the immediate result will be a better quality forest and better forest growth. On devastated areas it may require one or more tree generations to restore valuable forest cover, though during this period crops of fur and game may be harvested (fig. 44).

The inclusion of areas within the exterior boundaries of State, county, or national forests does not interfere with private ownership of land or even the selective development of farming, but tends to discourage unwise agricultural development in these areas, removes the public lands from sale and speculation, and gives a sound basis for reorganizing local governmental services. For efficient administration, ownership should be concentrated partly by exchanges, partly by public foreclosure on long-term delinquent land, partly by public purchase.

### Cooperative Management Feasible

It may take many years to straighten out completely the mixture of ownership. In the meantime, some type of cooperative management should be feasible. This must at the outset be quite simple and inexpensive. Experience on national forests indicates that an extensive type of management, exclusive of fire protection but including prevention of trespass and care of game and recreational resources, etc., can be effected for about 4 to 6 cents per acre annually.

Only when a careful classification of the land has been made, more of the better forest land placed in public ownership, and the burdensome cost of acquisition and organization absorbed, can available public financial resources be profitably invested in any intensive type of forest management such as is practiced on the better forests of Europe. It has been proposed that one-third of the public forests should eventually be put under intensive management in the Lake States.

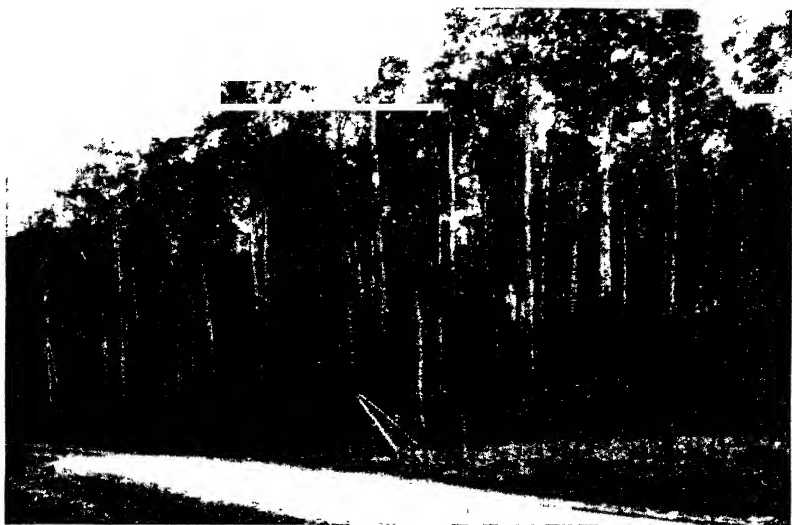


FIGURE 44.—Temporary aspen stand being converted naturally to fir and spruce through dependable fire protection.

In short, the answer to the question, what should be done with the millions of acres of wild and unused land in the Lake States, is forestry. Where practicable this may include extensive planting, cultivating, thinning, and pruning of trees, but over larger areas a less intensive but vitally important form of forestry is needed—a sort of benevolent custodianship which will prevent further abuse of the land and give nature a chance to restore the lost forest wealth.

R. N. CUNNINGHAM, *Forest Service.*

**LAND-USE Study in Georgia Lays Basis for Purchase Project** The old plantation piedmont Cotton Belt of Georgia was selected as a major area for study by the Bureau of Agricultural Economics in its investigation of land-use problems. The general objective of the study has been to ascertain facts from which there may be developed public and private programs of action to bring about the profitable utilization of land and to improve the economic and social conditions of the rural population. On the basis of the facts developed in the study, the Federal Government has initiated a submarginal land purchase project in the State. The first major segment of the study was a State-wide survey. This revealed the outstanding fact that the bollweevil invasion in 1920

merely precipitated a break-down, which had been under way for a number of years, in the agricultural plant in important sections of the State. This was particularly true in the lower piedmont. In 23 counties, for example, the agricultural plant (total land in farms, minus woodland) was larger in 1880 than it has been since. Probably the peak in those counties was reached before the Civil War. The decline up to 1930 ranged from 20 to 50 percent.

On the other hand, 43 counties had more acreage in their agricultural plant in 1910 than they had at any previous or more recent date; 55 counties reached their peak in 1920; and 36 counties in 1930. Of the last group of counties, 16 are located in the middle Coastal Plain, with some concentration in the Tobacco Belt. The shifting of cotton production northwardly in the piedmont and the expansion in horticultural pursuits in other sections of the State accounted for the increase in the remaining 20 of these 36 counties.

Generally speaking, the decline in agricultural development started in the old plantation piedmont Cotton Belt and progressed northward and southward. The decline, in large part, is the result of a detrimental land-use cycle practiced mainly by cotton farmers. Allowing land to revert to forest or other vegetative cover is merely one step in that cycle. Land was cultivated until erosion gullied the fields or washed the surface away. Forest or other natural vegetative cover tended to check erosion and gradually to build a new topsoil. Approximately 85 percent of the land in the 35 counties (covering about 25,000 square miles), representing the old plantation piedmont Cotton Belt, has been used for cultivated crops one or more times in the course of years. At present only 24 percent of that area is being used for cultivated crops.

### System of Farming Unchanged

The system of farming practiced—a system which does not include adequate protection against erosion, or leave the steeper slopes permanently in woodland—has not changed. When land was no longer suitable for cultivated crops it was allowed to pass out of cultivation and to revert to such vegetative cover as nature provided. Frequent fires, often deliberately set on the assumption of making better pasture, or for other reasons, reduced much of the area to waste. The drain upon land resources was heavy. Cheap labor made that possible until the bollweevil invasion no longer made it profitable for the landowner to keep croppers on his land and to guarantee their subsistence. Since the bollweevil invasion, practically all of the commercial stands of timber have been cut and sold. With these sources of cash income removed, the decline in agriculture for the 35 counties, as a whole, was on a scale not exceeded elsewhere in the country. The acreage in harvested crops in 1924 was but three-fifths of that of 1919.

There was a decrease in rural population in that belt between 1920 and 1930 of 120,019, or 23 percent. In that same period the population of 2 counties decreased over 40 percent; 7 counties, 30 percent to 40 percent; 12 counties, 20 percent to 30 percent; 6 counties, 10 percent to 20 percent; and in 2 counties the decrease was less than 10 percent. Three counties had an increase in population. The present (1930) rural farm population in those counties is 297,104, of which 56 percent is colored.

By far the greater number of the land holdings or ownership of 2 or more acres in 24 of these 35 counties are owned by residents of the county where the land is located, or by residents of adjoining counties. Of the 25,154 ownerships, 84.6 percent fall in that class; 10.9 percent are owned by residents of the State but beyond adjoining counties; and 4.5 percent by residents outside the State. The non-State residents own 6 percent of the total acreage, as compared with 80 percent for residents within adjoining counties, and with 14 percent for residents in the State outside of the adjoining counties. These facts suggest that the development of sound land use is not handicapped because of distant nonresident owners.

### Owner Operators the Largest Group

Owner operators represent the largest group of landowners, owning 38.5 percent of the total acreage, as is shown in table 10. Administrators and executors of estates, and banks and mortgage companies are next in importance. Land held by estates for settlement among heirs, or until minors come of age, makes up 10.5 percent of the acreage, which is a larger figure than is generally recognized. The amount of land held by banks and mortgage companies is significant in that it has been increasing in many counties since 1929.

TABLE 10.—*Acreage of land ownerships by business of owner old plantation piedmont Cotton Belt in Georgia*

| Business group                 | Acreage   | Percentage | Business group              | Acreage   | Percentage |
|--------------------------------|-----------|------------|-----------------------------|-----------|------------|
| Owner operators.....           | 1,792,740 | 38.5       | County.....                 | 13,394    | 0.30       |
| Merchants.....                 | 174,207   | 3.7        | State.....                  | 0         | 0          |
| Professional men.....          | 139,466   | 3.0        | All other owners except un- |           |            |
| Administrators and executors.. | 486,546   | 10.5       | known.....                  | 1,597,137 | 34.3       |
| Banks and mortgage companies.. | 357,007   | 7.7        | Unknown.....                | 10,591    | .20        |
| Real estate agencies.....      | 14,896    | .3         |                             |           |            |
| Woodworking industries.....    | 10,266    | .20        | Total.....                  | 4,651,347 | 100.0      |
| Power companies.....           | 36,232    | 1.20       |                             |           |            |

County records do not reveal the acreage of land owned by the county, or the acreage the county could acquire because of tax delinquency. The county figures given in table 10 are very incomplete.

Partial analysis of data suggests that a material proportion of landowners (resident and nonresident) fail to supervise the management of their lands. Management is, in large part, left to croppers or to other tenants, who lack information or capital necessary for proper management. The gradual destruction of the land in cultivated crops by the ravages of erosion and by careless burning of soil-building vegetation and young timber on land previously destroyed by erosion is, as a consequence, general rather than exceptional over the area. Instability of land ownership has proved to be the consequence.

This study has revealed that the existing maladjustments in the use of land resources are organic and not functional in character—that is, that they have resulted from traditional farm-management practices rather than from the bollweevil invasion, which corresponded with the period of general depression in agriculture beginning in 1921.



## Second Phase of the Investigation

The facts thus revealed in the State-wide survey in general, and in the 35 counties representing the old plantation piedmont Cotton Belt in particular, led to the second phase of the investigations—the selection of five laboratory areas for intensive study of relationships among character and intent of ownership, farm management practices, soil conditions, fiscal policies and practices, land use, and soil and erosion factors. The results of this many-sided attack on maladjustments in the use of land are in process of tabulation and analysis. In order to provide a basis for projecting the results secured from these laboratory areas to other parts of the 35 counties, a cross section of the entire region of one-eighth of a mile wide and 207½ miles long was mapped as to soil type, slope and erosion classes, and land use. Ownership data were obtained from all counties. The forested land was classed by type of forest cover, stand, density, volume, and age. Idle land was classified as to physical suitability for cultivation, pasture, or timber. The data obtained also will furnish a basis for the classification of the lands according to their suitability for wildlife.

A third major segment of this study consisted of making a detailed classification of land of the entire area of four adjoining counties in accordance with the use for which it is best suited. This classification, together with an analysis of fiscal, social, and related problems, will illustrate, by location, the need and a method for rural reorganization applicable to other sections of the State.

As an initial step toward effecting the materialization of sound land-use planning programs of action, a Federal submarginal land project, located in these four counties, has been tentatively approved. One hundred thousand acres of submarginal farm land, on which approximately 400 families reside, will be purchased and diverted to more extensive uses. The families located on this land will be resettled on adjoining land better suited for growing maintenance crops and non-competitive cash crops adapted to this area. This project will demonstrate the economic soundness and social desirability of rural reorganization and the program of study sketched above will point the way for expansion of needed reorganization to other areas.

WILLIAM A. HARTMAN, *Bureau of Agricultural Economics.*

**LEAD Arsenate Substitutes** The Department of Agriculture has constantly before it the urgent need for a substitute for lead arsenate in the control of the codling moth on apples and pears, as well as for the control of other insects wherever the use of this poison results in harvested products bearing residues that may be injurious to human health.

Lead arsenate has been the standard stomach poison for the control of chewing insects for 30 to 40 years, and its use has been steadily increasing. During recent years, however, there has been a growing realization of the danger of serious chronic effects on human beings from the regular ingestion of minute quantities of either lead or arsenic. One of the important tasks of the Bureau of Entomology and Plant Quarantine is to develop some material as effective as lead arsenate and yet much less injurious to human health.

Although lead arsenate is generally recognized as the standard insecticide, there are many chewing insects for which it is only partially effective. Even in the control of the codling moth, or apple worm, for which many million pounds of lead arsenate are used annually, the material falls far short of giving satisfactory control, especially under conditions of high worm population. The real objective, then, is a better insecticide, and even if there were no spray-residue problem a search for new and more effective stomach poisons would still be needed.

This search has involved the laboratory testing of many hundreds of new materials, followed by the testing of the more promising ones under practical orchard conditions. Although the goal has not been reached, it is believed that the information obtained thus far will aid in pointing the way to the ultimate development of a new insecticide.

The use of arsenic combined with some element less objectionable than lead would be a partial solution of the problem. Extensive work has been carried on with a long list of other arsenicals, but none has been found equal to lead arsenate for the control of fruit insects. Prominent among these is calcium arsenate, which is useful in the control of insects on many crops. Against the codling moth, however, it has been found definitely less effective than lead arsenate, and in the control of severe infestations the difference is an important one. As a further disadvantage, calcium arsenate is much more apt to injure foliage than is lead arsenate. Work is being continued with this group of materials, however, in the hope of developing some less objectionable arsenical.

In the past 6 years the Department has done a great deal of work with certain compounds of fluorine. Among these materials, sodium fluoaluminate, also known as cryolite, has been found of considerable value in controlling the codling moth in the arid areas of the Northwest. In fact, it has frequently given more satisfactory control than lead arsenate in those areas. In the more humid middle-western and eastern areas, cryolite has given less consistent results. Barium fluosilicate has also given encouraging results.

When the work with these compounds was first undertaken, little was known about the toxicity to human beings of fluorine in the minute quantities that would be present in a spray residue. The results of recent experiments and observations, however, have not been favorable to the use of the fluorine materials, and it is questionable whether they can be used any more freely than can lead arsenate. The Bureau of Entomology and Plant Quarantine is cooperating with the Bureau of Plant Industry in experiments with the removal of fluorine residues, since it is evident that the use of the fluorine insecticides on apples and pears must be followed by processing of the fruit to remove the residues.

#### Nicotine as a Possible Substitute

Nicotine is being investigated as a possible substitute for lead arsenate in codling-moth control. Nicotine has a high initial toxicity, but in practical field application it loses this toxicity very rapidly. Nicotine is rather volatile at high temperatures and, being soluble in water, is readily washed off by rain. Considerable progress has been made toward the working out of methods whereby the nicotine can be made more persistent on the foliage. Nicotine can be made considerably more effective by applying it with a dilute emulsion of one of the

highly refined oils. This combination has been used by a number of orchardists on a small commercial scale, but it is open to certain disadvantages. When the oil-nicotine combination follows applications of lead arsenate, it renders the arsenic and lead extremely difficult to remove at harvest time. The extent to which oil can be used on trees in foliage is more or less limited, even when the more highly refined oils are used. The oil sprays are likewise incompatible with sulphur fungicides, which in many of the humid areas must be used through the greater part of the season. Last, but by no means least, the frequent use of nicotine and oil is rather expensive, a factor which commercial growers cannot overlook.

Another possible method of improving the effectiveness of nicotine is by combining it with tannic acid to form a compound that is much less soluble and volatile than nicotine alone. The results with this combination have been favorable in certain localities, but much less favorable in others. A combination of nicotine with bentonite has also given encouraging results under some conditions. There is, therefore, every reason to believe that further work may result in the development of practical and economical ways of using nicotine. An unknown factor is the effect of nicotine in such combinations on the health of the consumer. Research work on this phase of the problem is being conducted by the Bureau of Chemistry and Soils.

#### Derris, Cubé, and Pyrethrum Tested

Derris, cubé, and related plants have also been investigated rather extensively as possible substitutes for lead arsenate. The roots of these plants contain rotenone and other constituents that possess definite insecticidal value. Unfortunately, however, these constituents are rather unstable when exposed to intense sunlight, and methods of using the materials in the control of the codling moth and other fruit insects have not yet been fully developed. The materials possess such a high initial toxicity, however, that they still offer a promising field for investigation. As with all the other substitute materials that have been considered, the exact relation of the derris derivatives to human health has not been established. Because of their instability, however, it is believed that, if they are found to be dangerous to human health, processing methods can be readily developed for their removal or for their transformation into nonpoisonous compounds.

Pyrethrum, which is extensively used in the preparation of fly sprays, also contains toxic ingredients that may ultimately prove useful in codling moth control. The compounds found in pyrethrum are likewise very unstable, and methods of keeping them longer on the fruit and foliage must be worked out, if they are to find a place in the codling moth control program.

To sum up the present status of the development of new insecticides, a generally practical substitute for lead arsenate in the control of the codling moth and other fruit insects has not yet been developed. On the other hand, many of the materials now under experiment possess the first essential, a high degree of initial toxicity to insects, and there is every reason to believe that methods will be worked out whereby some of these, or other materials as yet untried, will ultimately be developed into effective and unobjectionable substitutes for lead arsenate.

B. A. PORTER, *Bureau of Entomology and Plant Quarantine.*

**L**IVESTOCK Poisoned With Hydrocyanic Acid Can Be Saved by Prompt Treatment Each year many animals, principally sheep and cattle, die as a result of their having eaten plants which produce hydrocyanic or prussic acid. Some of these plants are native and grow wild in the pastures and ranges, and some are among our most valuable cultivated forage plants. Every State contains one or more of these plants so that the losses occasioned by them concern every agricultural community. The principal cultivated plants which are involved are the sorghums, Johnson grass, Sudan grass, and flax; the native plants are the wild cherries and arrowgrass. Although scientific studies have furnished some knowledge of the conditions under which these plants are most likely to poison animals, no satisfactory method has heretofore been suggested for treating poisoned animals. This situation has existed, no doubt, because of the rapidity with which the poisonous substance acts.

Recently in the practice of human medicine, methylene blue, sodium nitrite, and some other substances have been used with considerable success against prussic-acid poisoning, and these have been tried experimentally on animals similarly poisoned. The results suggested the possibility of developing methods of treatment by which one or more of these drugs could be used effectively by the practicing veterinarian.

### Small Quantity Enough to Kill

Because the quantity of prussic acid that is developed in the different plants varies between wide limits, it was necessary in the preliminary experiments to use the poison in a form that could be better controlled and to know just how much of it would produce fatal results. For this purpose potassium cyanide was administered by the mouth and it was determined that, for cattle, the smallest fatal dose, in terms of the hydrocyanic acid itself, was very close to 0.000204 percent of the animal's weight, and for sheep it was 0.000231 percent. The next step was a comparison of the effectiveness of the various substances that had been recommended as remedies for poisoned animals.

In the first series of experiments sheep were used, and four of the recommended substances were tried. These were methylene blue, sodium nitrite, sodium thiosulphate, and sodium tetrathionate. A definite quantity of each remedy was dissolved in water and injected into the abdominal cavity of a poisoned animal. The results indicated that, although all of these substances were to some extent effective as antidotes, two of them, sodium nitrite and sodium thiosulphate, were more satisfactory than the others.

### Combination Treatment Most Effective

In a second series of experiments cows were used, and sodium nitrite and sodium thiosulphate, both separately and in combination, were tried as remedies. In all the cattle experiments, solutions of these substances were injected directly into the jugular vein. Each one of these remedies, when used alone, prevented death in animals given 1.4 times the amount of the poison necessary to kill. When both remedies were administered in combination it was found that animals

could be saved that had received twice the fatal dose. In other words, the combination of the two remedies was more effective than either one by itself.

A third series of tests was then made to determine the effectiveness of the combination of sodium nitrite and sodium thiosulphate with sheep that had been poisoned by hydrocyanic acid. As in the first series, the remedies were injected into the abdominal cavity. The results demonstrated more clearly than in the cattle tests the superiority of the combination of the two remedies. When used by itself one of the remedies prevented the death of a sheep that had received 1.66 times the quantity of hydrocyanic acid that was necessary to kill. When both remedies were used in combination, animals were saved that had received three times the dose of the poison that ordinarily would cause death. In other words, the combination was nearly twice as efficient as either remedy by itself.

To test the combined remedies against poisoning by plants that produce hydrocyanic acid, a number of sheep that had been fed known quantities of arrowgrass were treated. The curative procedure in the tests was the same as when the potassium cyanide was administered. The results in most cases were successful when less than 2.5 times the quantity of arrowgrass necessary to kill had been eaten.

Sodium nitrite, however, is a moderately poisonous substance, so it was deemed important, as a precautionary measure, to determine just how much could be safely administered, also to determine what effect, if any, the presence of sodium thiosulphate might have on the poisonous effects of the nitrite. The results of a series of experiments with sheep showed that a safe therapeutic dose of the sodium nitrite for a sheep is 1.2 grams for 100 pounds of animal weight, that twice this amount is dangerously close to a fatal dose, and that more should never be administered.

### Prompt Treatment Necessary

As stated before, hydrocyanic acid acts very quickly after it has been administered. Consequently a series of experiments was conducted to determine just how promptly after poisoning the combination of the two remedies must be given to be effective. For animals that had been given 1.5 times the smallest quantity of the poison required to kill, it was found that if the animals were treated within 4 minutes after the poison was given there were chances of saving the animals, but if a longer time elapsed the animals were liable to die. When plants producing prussic acid have been eaten, the symptoms of poisoning do not develop quite so rapidly.

As a result of the facts presented, it is recommended that in cases of poisoning by any of the plants mentioned, a local veterinarian should be called at once and consulted regarding the giving of remedies. If possible, he should administer them, or they should be administered under his direction. Notwithstanding the need for early treatment, practical experience shows that veterinarians who answer calls promptly may save many animals by the method described. This is particularly true when, after a herd or flock has been turned out to pasture, a veterinarian is called at once if symptoms suggestive of prussic acid poisoning are observed in any of the animals.

In the case of sheep weighing approximately 100 pounds, inject intraperitoneally a water solution containing 1 gram of sodium nitrite and 2 to 4 grams of sodium thiosulphate. For cattle weighing 500

pounds or more, 2 to 3 grams of sodium nitrite and 10 to 20 grams of sodium thiosulphate should be used, and the solution should be injected intravenously. With both sheep and cattle the injection of thiosulphate may be repeated, but only one injection of the nitrite should be given. The solutions keep well and so may be made up ready for use. If desired, they can be sterilized by boiling without being materially changed.

A. B. CLAWSON, H. BUNYEA, and J. F. COUCH,  
*Bureau of Animal Industry.*

**L**UMBER and Log Stains Can be Controlled by Chemical Treatments      Unseasoned lumber and logs from some of the most important commercial trees are subject to serious discoloration, caused by sapstaining and molding fungi. The fungi may enter logs lying in the woods or at the mill, or lumber in the mill yards, or during subsequent handling. Log infections continue to develop in the lumber cut from the logs and serve as a source of infection to other lumber in the same yards. Damage in transit is especially common in export shipments. Such discolorations have lowered the quality and increased the cost of wood products both to the manufacturer and to the consumer. While strength properties of the wood are ordinarily little affected, its utility value is greatly reduced where a natural finish is desired.

During recent years a decided prejudice against the use of discolored products has developed among domestic and foreign consumers. This prejudice has been in part justified by the fact that decay in early stages is often associated with and masked by stain. Foreign buyers particularly have objected to discolored material and have been allowed large damage claims or have shifted their purchases to less susceptible woods. In an effort to meet consumer demands for unstained lumber, manufacturers have adopted more rigid grading rules which limit the amount of discolored material in the common as well as in the finish grades of lumber. The increased prejudice, coupled with the fact that second-growth timber contains more sapwood than does virgin timber, has made the problem of control increasingly important.

### Control Methods Commercially Applicable

Investigations on sap stain and mold control were begun in 1928 with financial assistance from lumber agencies of the Gulf States. A preliminary survey indicated that the development of cheap and efficient antiseptic chemical treatments offered most promise of yielding control methods of immediate commercial application. Current chemical treatments were of limited usefulness, since they were only partly effective on softwoods and not applicable to hardwoods. In addition, the small mills with few exceptions had not found it practicable to incorporate current stain-control methods in their manufacturing practices. The tests conducted since 1928 have provided the large pine and hardwood industries with equally cheap and much more efficient treatments for lumber, veneer, and other wood products.

Two of these treatments, low concentrations of an organic mercury compound and a mixture of chlorinated phenols in water, are effective on both pine and hardwoods and can be used by mills cutting both types of wood. A third treatment, borax in saturated solution, is equally effective on hardwoods, but is inferior on pine. Figure 45 compares the appearance of untreated lumber with that of lumber dipped in one of the new antiseptic solutions. The potential use of these treatments has been materially increased through recent tests demonstrating their feasibility for the small-mill industry. Increased value is indicated also by their prevention of some of the incipient



FIGURE 45.—Typical boards from untreated (left) and treated (right) test piles of southern pine lumber.

decay infections originating in lumber during storage periods. Such infections are important factors in replacement costs necessitated as a result of decay of wood in use. Experience so far with export lumber indicates that the treatments will reduce transit losses materially. Continued experimentation is expected to increase their value further for this purpose and for some other products and conditions not yet satisfactorily covered.

Chemical antiseptics similar to those mentioned for stain control on lumber, but with different methods of application, have proved effective in reducing fungus deterioration of stored logs. Recommendations can

be made for the prevention of stain and decay during normal storage periods in the Gulf States for seasons when insects are inactive. Promising results have also been obtained with the use of these materials as pretreatments for the control of stain and decay in fence posts during seasoning prior to impregnation with preservatives.

### Economic Value of the Treatments

The development of efficient treatments of low cost and easy application has aided pine and hardwood manufacturers in improving quality of both domestic and export products. It has stimulated an interest in stain control and hence in a generally improved product, as is evidenced

by the wide-spread adoption of these treatments by small as well as by large southern mills. The extension of stain-control methods to the small-mill industry is of decided significance in view of the fact that over 50 percent of the pine production in the South during certain recent years has come from the small mills. The efforts of the wood industry in general to raise the reputation and utility value of its products will be aided considerably if the standard of small-mill production is improved.

The significance of these stain-control treatments to the foreign buyer is indicated by the frequent specifications for chemically dipped lumber. American lumber is shipped to more than 50 countries, and discolorations occurring before and during transit have seriously handicapped some of the most important species in competition with other woods. Overcutting timber stands to supply the demand for higher grades of lumber has been reduced through sap-stain control and the consequent reduction in the proportion of lumber that goes into the lower grades. In other words, utilization practices have been improved and forest conservation has been aided thereby.

RALPH M. LINDGREN, *Bureau of Plant Industry.*

## MARKETING Agreements and Licenses Buttress Work of Cooperative Associations

During the 19 months since the enactment of the Agricultural Adjustment Act some 55 marketing agreements and 95

licenses have been approved. These agreements and licenses relate to a wide variety of farm products and affect directly or indirectly a large number of farmers. It is important, therefore, to review briefly these activities and to indicate in some measure the place which such activities should occupy in a continuous program of agricultural readjustment.

The authorization for marketing agreements under the adjustment act is very broad. The only limitation placed upon such agreements is that they must aid in the accomplishment of the purpose of the act, which is to restore the purchasing power of farm products. Parties to such agreements may include producers, associations of producers, processors and others "engaged in the handling of any agricultural commodity or product thereof, in the current of or in competition with, or so as to burden, obstruct, or in any way affect, interstate or foreign commerce."

The marketing programs which have been developed through the medium of marketing agreements and licenses are not readily subject to simple classification. By far the largest groups of programs, however, and those which are likely to be most important as a part of a continuous policy of agricultural adjustment are distinct in that they represent a further development and use of marketing plans which had been previously formulated and to some extent utilized for several years by cooperative and private handlers of particular products. Those familiar with the use of clearing houses and with various efforts at industry-wide cooperation in dealing with serious marketing problems in the fresh-fruit and vegetable industry during the past decade will recognize the marketing-agreement program of the past two seasons, insofar as it relates to this group of products, as the logical outgrowth of these earlier efforts. Likewise, the essential features of the marketing agree-



ments or licenses which have been developed in over 40 fluid-milk markets are similar to the various types of marketing plans which have been used by cooperative groups of milk producers for many years.

### Agreements Supplement Previous Program

The marketing agreement supplements these previous programs, however, in two important respects. The Agricultural Adjustment Act provides for the immunity of such agreements from the operations of the antitrust laws, which is important in dealing with problems involving interstate commerce. Furthermore, the licensing power of the act has been used as a means of making marketing-agreement programs effective on the minority groups which have not signed the agreement. These two features have made possible in some instances the development, for the first time, of reasonably effective programs for increasing prices to producers in which all handlers have participated. The most successful agreements and licenses are those which have been developed on the foundations built by long-established farmer cooperatives, the members of which, realizing that their own enlightened self-interest coincides with the best interests of their group, have formed the habit of thinking and acting together.

As early as 1914 the growers and shippers of cantaloups in the Imperial Valley of California undertook to regulate the movement of cantaloups to market in an effort to cope with an unprecedented supply situation. The following quotation refers to operations in 1922:

There was no definite cooperative organization as such, but the season was saved from disaster by real cooperation ably seconded by knowledge and facts. Each day, throughout the shipping period, all of the distributors met with the Federal market news service representative, in his office at Brawley, and each shipper gave his intended number of shipments for the day, with destinations. The totals of the intentions were compared with the consuming power of the cities, as charted, and with the shipments they had recently received. If it appeared that certain cities were being overstocked, the plans for shipments were so shifted that a more even distribution would be effected. Single cars were sent to smaller cities not previously slated to receive any, but shown on the records as capable of consuming an occasional carload.<sup>3</sup>

Here was the essence of a simple marketing agreement similar in many respects to many which have been developed during the past two seasons. This effort, however, was made without proper legal sanction and no means were available whereby any handlers who refused to cooperate could be required to assume their proportionate burden of the voluntary effort to adjust supplies to market demand.

Later efforts of a similar character, but including more comprehensive schemes for the actual withholding of shipments if necessary, were undertaken by several groups of California fruit and vegetable growers, including the growers of lemons, Valencia oranges, Flame Tokay grapes, Imperial Valley lettuce and cantaloups, Watsonville apples, canning peaches, and raisin, table, and juice grapes. In each case the action was taken in order to avoid the prospect of ruinous prices. Somewhat similar efforts to improve the distribution of particular products have been undertaken in other commercial fruit and vegetable producing areas, but usually with less success than that attained in the California experiments with approximate industry-wide cooperation in supply control. An outstanding difficulty in all of these efforts, however, was the fact that there was always a minority group which refused

<sup>3</sup> SHERMAN, C. B., A PRACTICALLY PERFECT PIECE OF DISTRIBUTION. *Jour. Home Econ.* 15: 13-14. 1923.

to cooperate and was, therefore, able to obtain the benefits of the price level established by the cooperating majority without bearing its share of the burden of supply control. One function of a marketing-agreement and license program then is to see that the benefits and burdens involved are, insofar as practicable, equitably distributed among all producers.

Even with the best of production planning it is to be expected that both with annual crops and with tree fruits, there will be years of heavy production, when, if no control is maintained over supplies marketed, the growers will receive little or no income for their crops. In October and November 1934, for example, a considerable proportion of the Florida grapefruit sold on the New York and Chicago auction markets failed to bring enough to pay the actual cash outlays involved in harvesting and marketing the fruit. In the case of tree fruits these problems of oversupply may persist for several years as a result of an ill-advised, uncoordinated, or promotional development of new orchards made in previous years. In the face of such a situation the growers must of necessity become interested in finding some way of marketing only that quantity and quality of fruit which will at least return more than the cost of harvesting and marketing, and also if possible some means of reducing the harvesting and marketing costs. In such circumstances a marketing program carried out through the use of an agreement and license may not retrieve all of the losses resulting from the previous mistakes in production planning, but it can frequently serve to alleviate the distress incident to the ruinously low prices which often accompany uncontrolled marketing.

The use of marketing agreements in dealing with the problem of supply control or regulation of movement to market is less satisfactory for annual crops than for crops such as tree fruits. Growers who have recently made expenditures for seed, labor, and fertilizer are naturally averse to withholding a portion of their product from the market after it is produced. On the other hand there are many problems involved in attempting to allot acreages or production quotas to individual producers as a part of a marketing-agreement program. It is obvious also that such a program could not be enforced on a minority of growers through the use of the present licensing provisions of the Agricultural Adjustment Act. In the case of the annual crops also acreage and production tend to respond quickly to improvement in price and a marketing-agreement program to be continuously successful must, therefore, include some provision for maintaining a checkrein on production.

The second important group of marketing programs which have been developed under the agreement and licensing provisions of the Agricultural Adjustment Act relates to fluid-milk marketing. Such programs are in effect in about 45 different fluid-milk markets. In each case the local organizations of producers have requested the application of this program as a means of improving prices to producers or of assuring equitable treatment to all of the various groups of producers in the area affected. Experience to date has shown that within reasonable limits milk-marketing agreements or licenses are unquestionably of value if they are used to protect producers from the effect of distributor price wars, eliminate the tendency for non-

members of cooperative organizations to nullify the efforts of the cooperators, or to develop protective services for producers such as check testing and check weighing. Too much should not be expected, however, of such agreements and licenses as have been developed to date as a means of dealing with low prices which are directly attributable to burdensome supplies. It may be possible, however, to develop programs which will include definite provisions for adjusting supplies in line with market demands.

As a purely emergency mechanism the marketing-agreement and license program has also demonstrated its usefulness in dealing with a considerable variety of farm products. In connection with the 1933-34 tobacco program, for example, marketing agreements were used primarily as a means of obtaining a higher price for the growers on the 1933 crop by capitalizing on the action of the growers in agreeing to reduce acreage in 1934 and 1935. Having served this emergency purpose, the agreements with one exception, were not continued. A marketing agreement for disposal of north-Pacific wheat surplus was utilized as a means of removing a burdensome surplus of wheat from the Pacific Northwest in the 1933-34 season. The marketing agreement of the peanut-milling industry whereby a minimum price was established for the 1933 crop was of a purely emergency type and has been superseded by the development of a production-adjustment program including the diversion of a part of the supply into feeds and peanut oil.

J. W. TAPP, *Agricultural Adjustment Administration.*

**M**ARKETING Studies The net income of farmers can be Show Importance of increased either by raising prices to Increased Efficiency the consumer or by lowering the costs of production and marketing. For example, bread cost the consumer an average of a little over 8 cents a pound loaf in July 1934. The farm price of wheat was about 80 cents a bushel. A bushel of wheat will make about 64 loaves of bread, so the consumer was paying over \$5 for the bread made from an 80-cent bushel of wheat. The remaining amount went to pay the miller, the baker, the transportation companies, and to pay for other materials such as milk and shortening. If bread prices were raised from 8 cents to 9 cents and costs of transportation, processing, and marketing remained the same the consumer would pay 64 cents more for the bread made from a bushel of wheat and the 64 cents would go to the farmer. However, the same result would be obtained if city bread prices stayed at 8 cents and the costs of transportation, processing, and marketing could be reduced 64 cents.

If the farmers' purchasing power is to be increased and sustained, adjustments are needed not only in the output of farm commodities but in the marketing of those commodities as well. Marketing costs rose rapidly during and immediately after the war and have stayed at high levels ever since. Any substantial improvement in the efficiency of our system of marketing will greatly benefit both the farmer and the consumer.

The need for adjustments in our marketing methods is brought forcefully to our attention by studies of spreads between farm prices and city retail prices of foods since 1929. In 1929 a month's supply

of 14 important foods cost an average American family \$26.11. By 1932 this cost had fallen to \$16.78. The farm value of the equivalent amounts of food products fell from \$12.40 in 1929 to \$5.54 in 1932. The spread between farm and city prices (or the total of all charges for transportation, processing, and marketing), fell from \$13.71 to \$11.24. In other words, while city prices were dropping 36 percent, the total cost of getting food from the farmer to the city consumer dropped only 19 percent. This failure of marketing costs to fall in proportion to prices of food was a result of the fact that many marketing costs are definitely fixed except over long periods. The relative inflexibility of such costs was to a considerable degree responsible for the fact that farm prices dropped 55 percent—or much more than the drop in city retail prices. In 1929 the farmer got 47.5 cents of each dollar spent by city consumers for these 14 foods. In 1932 the farmer got only 33 cents of the consumer's dollar.

### Many Relatively Fixed Charges

Between the farmer and the consumer there are many charges—such as freight rates, for example—which are relatively fixed. It took several years of depression to bring about any reduction at all in many of these charges. As conditions in business and agriculture improve there will doubtless be an attempt to increase such charges; perhaps to predepression levels. Some increases in individual cases may be entirely reasonable and just. The payment of processing taxes and of increased wages makes higher charges in some industries necessary. It is obviously desirable to prevent if possible any unnecessary increases in marketing costs and wherever possible these costs should be decreased by more intelligent and more efficient marketing methods.

The spread between farm and city values of foods has widened somewhat since 1932, but the increase has been very moderate in view of the fact that it now includes the payment of processing taxes on wheat and hogs and that wages have increased. From 1932 to July 1934 the city retail value of a month's supply of 14 important foods increased from \$16.78 to \$18.13, or 8 percent. The farm value of the equivalent amounts of food products rose from \$5.54 to \$6.60, or 19 percent. The spread between farm values and city values increased from \$11.24 to \$11.53, or 3 percent. As a result of the fact that marketing costs increased proportionally less than did prices of food, the farmer's share of the consumer's dollar increased from 33 cents to 36.4 cents. It should be remembered, of course, that the part of the margin represented by the processing taxes goes back to the farmer who cooperates in farm adjustments; so that the real spread between what the farmer gets and what the consumer pays is not quite the total spread between farm prices and city prices.

These figures show that since 1932 the spread between farm product values and city retail values of food products has increased only slightly. The payment of processing taxes and higher wages accounts for at least a large part of the increase that has occurred. Nevertheless, it should be recognized that these spreads are high and probably could be reduced in many cases by more efficient methods of marketing and distribution. Marketing costs in this country increased greatly during and immediately following the war and although they have been somewhat reduced since 1929 they are in most cases still considerably higher than they were before the war. The result is

that in many cases the consumer is paying more for foods and other farm products than he did before the war while the farmer is getting less. In order to procure for the farmer as reasonable a return as possible we must have efficient marketing as well as orderly production.

Spreads between farm prices and city retail prices in the United States are in many cases higher than in other countries and such differences cannot be wholly explained by differences in wage rates. For example, in a number of European countries consumers can buy wheat bread at about one-half the average price in the United States although the price of wheat is higher than in this country. Only a part of this difference can be explained by lower wage rates in Europe. Perhaps the most important reason for the difference is in the different systems of distributing and marketing bread and in the extra services such as wrapping and slicing which American bakers commonly give.

### Coordinated Research Needed

It has become apparent in the last few years that we need a broader and more coordinated program of marketing research in order to get at the facts on the basis of which we can improve the marketing of farm products. For that purpose the Department of Agriculture recently organized a Division of Marketing Research in the Bureau of Agricultural Economics. The new Division will be able to study many broad problems of marketing which do not come entirely within the scope of any of the commodity divisions. It will also work with the commodity divisions of the Bureau of Agricultural Economics and with other research agencies to bring together the available facts and to study them for the purpose of finding practical ways of improving our system of marketing.

In connection with a research program in marketing the Department is carefully studying the possibility of using the marketing agreements under the Agricultural Adjustment Act to bring about more orderly and more efficient marketing. It is conducting a series of studies, for example, to determine the extent to which the marketing agreements under the Special Crops Section have improved the prices paid to growers; how they have affected dealers' costs and charges and marketing methods and practices; and how they have affected consumers' interests, including the effects on retail prices, on availability of supplies and on the quality of food.

Many experiments have been made with the marketing agreements. These experiments include agreements to control supplies, to fix prices to growers, to fix resale prices, and to establish uniform trade practices. The results of these experiments are being carefully studied in order that policies may be worked out which will not only promote more orderly distribution but will lower the costs of marketing, increase consumption, and return to the farmer a better income.

Marketing agreements under the Agricultural Adjustment Act have also emphasized the need for further developments in standardization and in market news. The services which the Bureau of Agricultural Economics has built up in these fields have been indispensable in connection with many of the marketing agreements and in many cases these services have been expanded and modified to meet the special problems resulting from the agreements. The whole program of grading and standardization must be kept flexible in order that

changes in the grades and in their application can be made in the light of increased knowledge of the qualities demanded by consumers and dealers and of more complete facts concerning the relation of quality factors to the use value of commodities.

Standardization and grading are not only for the purpose of protecting the consumer but also should make it possible for farmers to get premiums for superior quality. Studies of cotton prices and prices of some other farm products have shown the need for changes in methods of marketing in order that premiums for quality may be more fully reflected in the prices paid to farmers. Such premiums are a necessary incentive to the improvement of quality.

There is an increasing interest in grades and standards to be used in the retail trade to identify the quality of foods bought by the consumer. The development of such grades and standards would be of great benefit to the consumer and indirectly to the farmer also.

The most important and most difficult problem in marketing is in bringing about changes in our present methods and practices and in our market institutions, organizations, and facilities in order to promote efficiency and to lower marketing costs. Such a reorganization of marketing methods and facilities requires careful studies of the existing structure of our marketing system and the joint analysis of the economist and the engineer in order to find practical ways by eliminating costly methods and unnecessary services.

### Many Wholesale Markets Inefficiently Organized

The wholesale markets for food products in many of our large cities are very inefficiently organized. Facilities have in many cases been built by rival railroads and are not properly located. In many cases the markets for local farm products and for truck receipts are poorly organized and are not coordinated with other parts of the market system. Such a situation leads to unnecessarily high costs of marketing and distribution. Not only the city consumer but the farmer, as well, has a vital interest in reducing such unnecessary costs.

Marketing methods are changing rapidly both in the city and in the country. Such developments as the growth of direct buying by large retail organizations, the increased distribution by motor truck, the direct marketing of hogs, the development of auction markets at country points, the greater number of commodities sold on futures contracts by commodity exchanges, and new developments in methods of cooperative marketing all are experiments which may lead to improved methods. The results of such experiments must be carefully watched and studied scientifically.

Much can be done to build up a better marketing system by the regulation of methods and practices either by law or by marketing agreements. In addition to such regulation, research and educational work are necessary in order to point the way to practical improvements in marketing.

Improved marketing and better education can also go a long way toward increasing the consumption of certain foods. Surveys made by this Department during recent years have shown a wide-spread underconsumption of milk. Many city families are also getting inadequate supplies of vegetables and other foods. At least a part of

this underconsumption can be remedied by better marketing and distribution.

FREDERICK V. WAUGH, *Bureau of Agricultural Economics.*

**M**ASTITIS of Cattle May be Controlled by Tests and Sanitary Procedures The best present evidence indicates that the cattle disease, mastitis, also known as garget and mammitis, exists to some extent in a large number of dairy herds in this country, probably in the majority. In some of these herds, nearly one-half of the milking cows are affected.

One species of bacteria appears to be responsible for about 90 percent of the cases of mastitis. The disease produced by these bacteria is as a rule of chronic form. In many cases no indication of infection is observed other than the occasional appearance of flakes in the milk and a decrease in milk production. Other cows, however, may suffer recurrent attacks of acute mastitis in which the udder becomes hot, swollen, and painful, and the milk secretion drops abruptly or may stop entirely. Under proper management the acute condition subsides rather quickly and the udder returns to its former state, but the infection remains. Relatively few cows seem to recover completely from the disease, which persists in the udder from one lactation period to the other without any disturbance in the general health of the animal.

#### Methods of Detecting the Disease

Although attempts have been made to cure the disease by various measures, none has yet proved to be generally effective. Since the mastitis bacteria appear to spread from the diseased to healthy animals through milking, either by machine or hand, a promising means of controlling the disease is the detection of the infected animals and milking them after the healthy ones. Many tests have been devised to find these diseased animals and some of them have been investigated by the Bureau of Animal Industry.

All but one of the tests studied depend upon detection of changes produced in the milk by the bacteria which cause mastitis. The test which does not relate to the composition of the milk is made by palpating the udder for the presence of changes in its physical character. When the udder becomes infected, the normal glandular tissue is gradually replaced by fibrous tissue. As a result hard nodules or diffuse areas of hardened tissue are felt when the udder is manipulated with the fingers. Such changes are always diagnostic of mastitis.

The most practical test for dairymen is to use the strip cup daily. This is simply a tin cup covered with a fine wire screen or a piece of black cloth. Two or three streams of milk are drawn onto the strainer from each quarter immediately before the animal is milked. Any quarter in which clots are found is infected with mastitis. Inasmuch as clots are not always found in all the infected quarters, the test is not entirely effective. Another measure which can be applied in the stable determines the degree of acidity of the milk as soon as it is drawn from the cow. The test consists in adding a given quantity of a color indicator, bromothymol blue, to a definite quantity of milk.

If the change in color shows an appreciable increase in alkalinity or acidity, mastitis is present. The proper interpretation of this test requires considerable skill, and even experienced persons may overlook some infected quarters because milk from such quarters is not always changed in reaction.

### Services of Veterinarian Desirable

The other tests which have been tried are best conducted in the laboratory, although a modification of one of them—the chlorine test—has been used in the field. When a quarter is affected with mastitis, there is an increase in the quantity of chlorides present, a condition which in severe cases is sufficient to give a salty taste to the milk. Another test is the determination of the number of body cells present in a known quantity of milk. When infection is present in the quarter, the number of cells increases sharply. All these tests, however, indicate only that the quarter is diseased without showing what the cause may be. The only means of determining definitely whether mastitis bacteria are present in the affected quarter is by bacteriological examination of a sample of milk drawn as carefully as possible to exclude outside contamination. By this procedure the number and kind of bacteria may be determined, but because of the labor and equipment required it cannot be used on a large scale.

In spite of the limitations of these tests, a very large percentage of animals infected with mastitis may be detected through the use of a combination of two or more of them. It appears, therefore, that when a herd has been examined with the tests, the infected cows are kept apart from the healthy ones, and other necessary sanitary precautions are regularly taken, the spread of mastitis may be reasonably well controlled. The services of a veterinarian should preferably be obtained so that the tests and other procedures selected for use may be based on his scientific knowledge of the disease.

W. T. MILLER, *Bureau of Animal Industry.*

**MEXICAN Fruit Fly Spread is Prevented by Strict Quarantine Enforcement** The Mexican fruit fly is one of the serious pests of fruit that has not yet become widely disseminated in this country. In Mex-

ico this fly is probably the worst enemy of fruit with which the growers have to contend. In that country it inflicts heavy damage to the mango, citrus, and stone-fruit crops, the infestation in mangoes at times reaching 100 percent. Should this pest become established in the fruit-growing sections of the United States, untold losses would undoubtedly result. Although Mexico is carrying on a vigorous campaign against the fly, the duty of preventing its entry and dissemination in the United States rests upon the Bureau of Entomology and Plant Quarantine.

The lower Rio Grande Valley in Texas has developed in recent years into one of the major citrus-producing areas of the country. There has been no corresponding development on the Mexican side of the river, and not enough fruit is grown there to supply the local markets. As a result large quantities of fruit are brought to the



border towns from the fly-infested areas farther south. These towns are separated from the American groves only by the width of the Rio Grande, and the imported infested fruit is a continual source of infestation to these groves. The Mexican Government realizes this danger and cooperates in enforcing local control measures on the Mexican side of the river. However, since the fly is present practically throughout the fruit-growing areas and feeds upon a wide range of fruits, to prohibit the shipment of its known hosts from the known infested sections would deprive the local markets of practically all fruit.

There have been a number of sporadic infestations of this fly in the Texas groves since it was first known to have crossed the Rio Grande in 1927. As a result of the methodical examination of the bearing groves by inspectors of the Department of Agriculture, these infestations have been discovered in their incipient stages. Processing and destroying the fruit in the infested groves, followed by spraying the trees immediately upon the discovery of an infestation, has proved effective and thus far has prevented the fly from becoming established here. Because of these protective measures the citrus industry in the valley has grown in the face of a continued threat of reinfestation from across the river. By a system of shipment under permit, based on the inspection of the groves, the channels of commerce have been kept open to the products of the valley orchards with no danger to the other fruit-growing sections of the country. Without this protection the industry would have been strangled through loss of damaged fruit and adverse quarantines.

### Traps and Attractants Used

Approximately 7 million of the 8¼ million citrus trees growing in the lower Rio Grande Valley have been planted within the last 7 years. With a million additional trees coming into bearing each year over which it was necessary to maintain supervision, it was found that sufficient time could not be devoted to the individual groves to determine accurately the presence or absence of an infestation. It was imperative, therefore, to develop some mechanical means of detecting infestations to supplement the manual inspection of fruit in the groves and packing houses. Traps and attractants were tried. A glass bell-type trap with fermenting malt as the attractant proved more effective than manual inspections during the fiscal year 1934, since in the majority of groves in which flies were trapped intense manual inspections failed to reveal larvae in the fruit. The difficulty in the use of traps lay in the impossibility of covering all groves continuously. Traps were accordingly operated in the more susceptible groves while manual inspections were continued in those less likely to harbor an infestation.

While the Mexican fruit fly has thus far been prevented from obtaining a firm foothold north of the Rio Grande, its continued repulsion depends upon constant vigilance.

P. A. HOIDALE, *Bureau of Entomology and Plant Quarantine.*

## MILK Sugar Produces More Rapid Growth in Young Animals Than Cane Sugar

Feeding a ration containing milk sugar to young laboratory animals causes them to grow more rapidly than others fed on a ration containing cane sugar. This greater rate of growth is due to the production of muscle and bones, not to the accumulation of fat. Adult laboratory animals, however, become heavier on a cane-sugar ration than on a milk-sugar ration, but the excess weight consists of fat. Laboratory animals, in general, live longer on a ration containing milk sugar than on one containing cane sugar.

These are conclusions derived from feeding experiments with rats carried out by the Bureau of Dairy Industry in the past few years. Similar results on growth of pigs have been obtained by workers in the Bureau of Animal Industry.

Although pediatricians and nutrition workers in general have realized for a long time that milk sugar differs from the other common dietary sugars in several rather striking characteristics, there has been much doubt as to what advantages, if any, milk sugar might have over other sugars from the nutritional standpoint. In fact, many pediatricians have for some years advocated the use of maltose and glucose instead of milk sugar in prepared rations for babies because of the more rapid and complete utilization of these sugars and because of the claim that there is likelihood of digestive disturbance when milk sugar is used. This claim has recently been shown to be unwarranted. Another recent investigation led to the conclusion that age weight for age weight, the lactose-fed infant possesses more living tissue than does the infant fed on vegetable sugar.

### Experiments with Rats and Pigs

It was to obtain confirmatory and additional information on the nutritional effects of milk sugar, not only on young animals, but also on adult animals, that feeding experiments were conducted at the Beltsville laboratories of the Department of Agriculture. Since it was necessary to make post-mortem analyses of the whole bodies of the experimental subjects, rats and pigs were used.

In a representative series of experiments, balanced rations were used containing 63.5 percent of carbohydrate. Ration 1 contained 63.5 percent of dextrin; ration 2, 33.5 percent of dextrin plus 30 percent of milk sugar; ration 3, 3.5 percent of dextrin plus 30 percent of cane sugar. Groups of three rats of the same sex, age, and weight, were fed the three rations, each rat being on a different ration, and rates of growth were compared. Several sets were killed and analyzed at various stages of the experiment and the others were continued on their respective rations until they died naturally.

Regardless of whether the young rats on the milk-sugar and on the cane-sugar rations ate all they wanted or were limited to equal quantities of their food, those fed the milk-sugar ration grew faster than their partners on the cane sugar. But, after reaching what may be called adult age, the rats fed cane sugar became heavier than their partners fed milk sugar. Analyses of several adult rats showed that this difference in adult weight was due practically entirely to a difference in quantity of fat. Of the rats allowed to live until death occurred naturally, the milk-sugar fed rats survived longer than their cane-

sugar fed partners. Post-mortem examinations did not reveal any consistent cause of death for the rats on either ration. The effects of dextrin fed as the sole carbohydrate of the ration paralleled those obtained when cane sugar was substituted for part of it.

The fat percentages of the carcasses of hogs that had been fed a cane-sugar ration were considerably greater than those of hogs fed a milk-sugar ration. It was also observed that the flesh of the hogs on the cane-sugar ration was softer than that of the other hogs.

It is unsafe to claim that results identical with those obtained on animals would be obtained in experiments with human subjects, but it is probably true that somewhat similar differences in physiological effects would be found.

E. O. WHITTIER, *Bureau of Dairy Industry.*

**MINNESOTA Land-Use Planning Study Points Way to State Action** A study of land-use planning in northern Minnesota, was completed last year by the Division of Land Economics of the Bureau of Agricultural Economics in cooperation with the division of agricultural economics of the University of Minnesota. Results of the study were published by the University of Minnesota Press in a book entitled, "Lands of Northern Minnesota; Their Use and Problems of Adjustment."

The major purpose was to define a program of adjustments for a large segment of the State including 14 of the northeastern counties.<sup>4</sup> Problems were attacked from a regional point of view, emphasis being placed upon the development of plans of action rather than upon the exploration of problems and causal relationships.

In the settlement of the cut-over lands of the State many mistakes were made. Lands too poor for farming were settled indiscriminately. Costly drainage projects were undertaken to reclaim vast areas of peat lands that subsequently proved too poor to support farm families. Roads were built and school facilities were developed in the vain hope of a dense population. Interest charges on the bonded debt, and the costs of providing simple functions of government for a scattered population, proved too heavy to carry.

Tax delinquency started as early as 1921. As collections decreased, levies and assessments were repeatedly raised in unsuccessful attempts to provide adequate revenues. The increased assessments and levies accentuated the amounts of tax delinquency. A system of tax abatements or "bargain settlements" was introduced as a means of returning delinquent lands to tax lists and raising revenue. Some money was collected from bargain settlements but the system induced rather wide-spread voluntary delinquency. Several counties have as much as 85 percent of the land area delinquent for general-property taxes. The State has assisted several counties with the interest on and principal payments of their bonds in order to avoid default.

Under existing law, 8 million acres or more will revert to the State in 1935 for the nonpayment of taxes. The problems facing the State are (1) how to manage this huge newly acquired domain, and (2) how to put units of local government back on a self-sufficing basis.

<sup>4</sup> Aitkin, Beltrami, Cass, Carlton, Cook, Crow Wing, Clearwater, Hubbard, Itasca, Koochiching, Lake, Lake of the Woods, Pine, and St. Louis.

### Land Classification of 14 Counties

To assist in answering the first question, a tentative land classification of the 14 counties was made. All lands were placed in 1 of 2 zones, agricultural or conservation, depending upon soils, degree of stoniness, location, present use, and other factors. Suggested zoning legislation was drafted as a means of dedicating lands to the most appropriate uses. It was recommended that all land in conservation zones which reverts to the State be turned over to the conservation commission for management as forests, game refuges, etc., and that lands in agricultural zones which are suitable for farming and which revert to the State be sold and the proceeds divided among the various local taxing units to be used for the retirement of bonded indebtedness.

The problems of private and public ownership of forest lands were examined, and a suggested ownership and management program was outlined. Attention was given to methods of improved farm management, and problems involved in giving farm families an opportunity to relocate on better land were considered. Farm-record data indicated that it was impracticable immediately to clear wild land covered with green timber for new farms, and that even with delayed clearing the settler would have to accept a very low hourly wage if his farm development was to be financially successful. Budgetary analysis indicated that settler relocation would be feasible provided easily cleared lands were used where a settler could erect farm buildings and clear about 40 acres of crop land in 2 or 3 years, assuming a total mortgage indebtedness of not to exceed \$2,500.

On problems of local government, estimates of possible savings arising from the relocation of settlement were made. A detailed financial study of units of local government was undertaken to determine possible savings by transferring functions to larger units and by consolidation of units. Estimated savings arising from the transfer of functions from townships to counties would approximate \$199,100 annually for the 14 counties. School reorganizations would save \$175,600 annually and county reorganizations \$92,100 annually. By concentrating settlement in agricultural zones an additional \$507,700 could be saved from the above sources, making a total estimated saving of about \$974,500 annually. There are in the 14 counties about 5,000 families living in the suggested conservation zones. If these families could be relocated, savings in costs of local government would amount to about \$100 per family per year. Under such a reorganization, the standards of roads, schools, and other services could be raised substantially.

The estimated savings in government costs alone would not put local units on a self-supporting basis, but they would be of material help.

R. I. NOWELL, *Bureau of Agricultural Economics.*

**M**OSQUITO-CONTROL Work Upon the establishment of the  
Under C. W. A. Project Civil Works Administration  
Brings Many Benefits the need of selecting useful  
lines of employment for those  
out of work was at once apparent. The main objective was to put the  
unemployed to work quickly and to keep them usefully employed dur-

ing the winter of 1933-34. Therefore, it was desirable to use a large proportion of the funds for the employment of men and as little as possible for machines and materials. The relief of human distress by providing productive labor was the important thing, and this was kept in mind.

Mosquito control appeared to lend itself admirably to the needs of the situation. Accordingly, two Federal projects were approved, one on malaria control under the auspices of the United States Public Health Service with L. L. Williams, Jr., as director, the other on pest mosquito control under the direction of the Bureau of Entomology. The former project was carried on in 14 Southern States where malaria is a serious problem, and the latter in 32 States and the District of Columbia.

Mosquitoes are serious pests in parts of every State of the Union. Since they breed extensively in stagnant water, they are most troublesome in areas of considerable rainfall and along the coast where extensive salt marshes exist. They are also very troublesome, however, in the irrigated sections of the West and along rivers which at times overflow and flood considerable areas, thus creating numerous pools in the bottom lands when the flood waters subside.

Not only are mosquitoes responsible for the transmission of malaria and yellow fever, but they carry fowl pox, certain parasitic worms, dengue fever, and brain fever of horses. In addition to the part mosquitoes play in the transmission of this formidable array of diseases, they are also of great economic importance as annoyers of man, livestock, and wildlife. Considerable numbers of livestock have even been killed by the attack of hordes of mosquitoes.

In many areas mosquitoes are so abundant as to interfere with farm operations and to retard milk flow and torment all classes of livestock. The development of many areas for industrial and resort purposes has been held back by mosquito abundance. Thus there is every reason to make serious efforts toward the betterment of these conditions.

All mosquitoes require water for their development. Usually the water in which they breed is stagnant, or at least quiet and free from insect-eating minnows. This suggests at once the need of eliminating stagnant pools and of allowing fish to enter freely into all parts of ponds, lakes, and marshes. This is accomplished by several methods, such as the construction of dikes to raise the water level, the cutting of ditches to drain the stagnant pools or to permit the free ebb and flow of the tide, the straightening and deepening of the edges of streams and lakes, and the clearing of brush from overflowed areas and along streams.

#### Elimination of Breeding Places Gives Best Results

The elimination of mosquito-breeding places gives much more lasting benefits than does the use of oils, etc., for the destruction of the mosquito larvae. However, work of this type cannot be regarded as permanent, and provision for maintenance must be made.

In organizing the C. W. A. project for pest mosquito control, the Bureau of Entomology first selected a competent director in each State where the work was to be undertaken. The State entomologist was in most cases chosen for this position, his services being contributed by the State. An assistant State director and several supervisors and foremen, the number depending upon the number of men

employed, completed the supervisory force. Most of the supervisors and foremen, as well as the laborers, were chosen from the lists of the unemployed or from the relief rolls. As far as possible, the supervisory positions were filled by men with experience in this or related work. The importance of having properly trained men to direct the work became very apparent as the work progressed. The C. W. A. organization in the various States attended to the purchasing of tools and equipment and the assignment of laborers to the various sub-projects as requested and handled all disbursements.

Unfortunately from the standpoint of efficiency, the work had to be started without delay, and thus there was little opportunity to make surveys much in advance. Furthermore, since the project was begun in the winter, when mosquito breeding was not going on, it was difficult to lay out the work to the best advantage. The severe winter in the Northeastern States was also a handicap, although the open win-

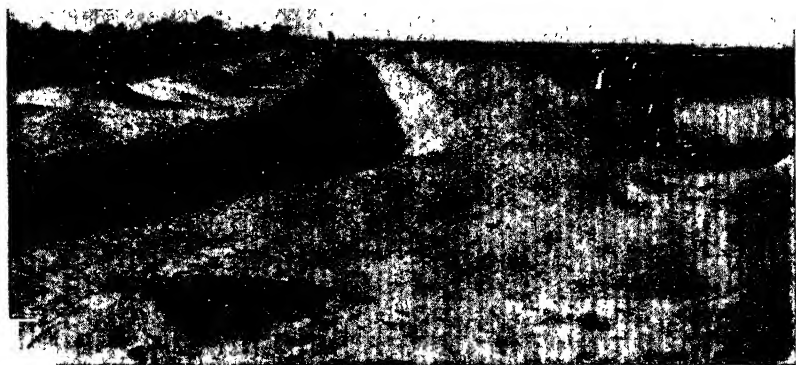


FIGURE 46.—Main drainage ditch through sandy soil, Cat Island, Miss., dug by C. W. A. workers as a mosquito-control measure.

ter in the Central and Western States was advantageous. The great demand for tools for the many projects requiring them made their procurement very slow and difficult. For the most part, tools and special equipment, such as rubber boots, were furnished by the Government.

The project was approved on November 28, 1933, and terminated on February 15, 1934. On December 14, 2,064 men were at work, and the number rapidly increased until a maximum of 21,817 were under employment on February 2, 1934.

The physical results of this project may be briefly summed up as follows: More than 1,930 miles of ditches were dug (fig. 46). About 400 miles of stream banks were cleared, deepened, and straightened (fig. 47). Dikes to the extent of 53,020 feet were thrown up. Metal and concrete culverts to the extent of 7,566 feet were put in, and about half as much more was reset or repaired. About 50 tide gates were installed. In dredging, filling, and excavating, about 400,000

cubic yards of dirt and rock were moved. Brushy areas totaling approximately 7,600 acres were cleared, and approximately 11,000 feet of tile drains were installed.

### Indirect Benefits Realized

In addition to these accomplishments a number of other indirect benefits resulted from this work. The morale of many communities that had suffered severely from the depression was noticeably improved. The men showed an active interest in the project and the



FIGURE 47.—C. W. A. workers clearing, straightening, and deepening stream through marsh at Westminster, Md., in carrying out mosquito-control project.

benefits that the community might derive from their labors. The work demonstrated to hundreds of communities how mosquitoes may be controlled and trained groups of men throughout the land in mosquito-control methods so that they may intelligently carry on such work in the future. The elimination of unsightly dumps and pools around towns and in cities was highly appreciated by the citizens and helped to increase their pride in their communities and to make them realize the possibilities of concerted effort along these lines.

Several States arranged to continue the mosquito-control work as State projects after the closing of the Federal activity, and in many places the work was continued under county or local auspices.

While the work was terminated too soon to complete all the sub-projects, many reports showing marked reduction in mosquito abundance were received by the Department during the summer of 1934.

F. C. BISHOPP, *Bureau of Entomology and Plant Quarantine.*

**N**ITROGEN Balance Sheet Shows Annual Deficit Requiring Replacement Some idea of the removal of fixed nitrogen from the soil by crops may be gained from the fact that the 889,702,000 bushels of wheat and 1,733,429,000 bushels of corn harvested in this country in 1930 contained over 1,400,000 tons of nitrogen. The total capacity of all the commercial plants in the United States for manufacturing fixed nitrogen artificially is less than 250,000 tons of nitrogen. In addition to the losses of fixed nitrogen through removal of crops, there are other losses due to leaching, surface washing, denitrification, etc.

### Natural Nitrogen-Fixing Processes

Originally man was dependent solely on natural nitrogen-fixation processes for supplying to the soil the nitrogen compounds which were required by his crops. Electrical and possibly photochemical processes occurring in the air fix small amounts of atmospheric nitrogen. The compounds thus formed, together with the fixed nitrogen in floating bacteria, plant spores, dust of organic origin and ammonia, which has escaped into the air as a result of the disintegration of nitrogenous organic matter, are brought down by rain and snow to benefit the soil by the nitrogen so received. Also the soil is inhabited by free-living bacteria and other micro-organisms which, in their life processes, abstract nitrogen from the air and fix it in chemical combinations.

In addition, other soil bacteria have the power of entering the tissues of certain higher plants, such as the legumes, and fixing atmospheric nitrogen in cooperative relationship with them though they apparently do not fix nitrogen when living an independent existence. The gains in nitrogen as a result of these natural fixation processes are more or less balanced by various naturally occurring chemical and bacterio-chemical reactions which liberate both free nitrogen and ammonia so that the amount of fixed nitrogen actually present in an uncultivated fertile soil at any time is seldom, except in peat soils, as high as 0.5 percent of the weight of the surface soil.

Experience has taught that, under most conditions, the continued growing of crops other than legumes upon a given soil, with the removal of these crops year by year, results in a continual decrease in crop yields, usually due to a decrease in the fixed nitrogen content of the soil since nitrogen is most often the limiting plant-food element in soils. Through experience it was also learned that the supply of fixed nitrogen to soils by natural fixation processes might be supplemented by the addition of natural manure and other waste nitrogenous materials of vegetable and animal origin. Finally knowledge was acquired that inorganic-nitrogen compounds were also efficient sources of plant-food nitrogen. As a result of this knowledge came the utilization for fertilizer purposes of natural accumulations of nitrates and, later of ammonium sulphate, a byproduct of the coking of coal, the metamorphosed remains of prehistoric plants.

### Artificial Nitrogen-Fixing Processes

Enlarging requirements for fixed-nitrogen supplies finally led to efforts to bring about the artificial fixation of atmospheric nitrogen. The first commercially successful process for doing this, known as the



electric-arc process, was attained in 1904 through imitation of the natural fixation by electrical discharges. Shortly afterwards, the cyanamide process, in which lime is caused to react with coke to form calcium carbide and this product in turn reacts with nitrogen to produce calcium cyanamide, was introduced. Finally in 1913 came the synthetic-ammonia process, in which nitrogen is combined directly with hydrogen to form ammonia. Although the newest of the nitrogen-fixation processes, this has outstripped the other two in importance and is, in fact, the only method commercially used in the United States. Although natural nitrogen-fixation processes will always remain the principal source of soil nitrogen, the natural supply may now be supplemented by products derived from these artificial processes to any extent which proves profitable.

### Fixed-Nitrogen Losses

An estimated balance sheet for the nitrogen of our soils, based on such data as are available, is as follows:

|   | <i>Short tons</i> |
|---|-------------------|
| Annual loss, 60 pounds per acre, 300,000,000 acres..... | 9, 000, 000       |
| Annual gain from—                                       |                   |
| Manure of domestic animals.....                         | 1, 750, 000       |
| Atmospheric precipitation.....                          | 1, 000, 000       |
| Free-living micro-organisms.....                        | 1, 000, 000       |
| Legumes.....  | 1, 750, 000       |
| Applied fertilizers.....                                | 200, 000          |
| Total.....  | 5, 700, 000       |
| Net annual loss.....                                    | 3, 300, 000       |
| Total.....  | 9, 000, 000       |

Although such a balance sheet is a rough approximation only, it nevertheless portrays the enormous annual loss of nitrogen.

### Methods for Meeting Losses

The large annual deficit in the balance sheet may be reduced to some extent by better control of the losses that are due to leaching and surface washing or erosion. Good methods of tillage can conserve the moisture of the soil and keep the soil in suitable condition for bacterial activity. Cover crops particularly may be grown to prevent erosion.

In regions where soil conditions, rainfall, etc., permit the growing of legumes, these crops may be used to return to the soil a part of the nitrogen removed by other crops and in some localities possibly all the nitrogen required may be supplied by such means. Adverse soil conditions may largely eliminate the legume-bacteria population from the soil and when a new legume crop is introduced it may be necessary to bring in the proper bacteria also. By the isolation and selection of high nitrogen-fixing strains which can be propagated and maintained in pure culture, by the utilization of lime, phosphates, and other fertilizers for the correction of conditions detrimental to these organisms, and by the selection of suitable species or varieties of plants the efficiency of legumes as fixers of nitrogen has been greatly improved.

The elimination of waste in the handling of crop residues and animal manures and the return of these to the soils is highly important because not only is nitrogen thus conserved but a supply of organic matter as humus to promote bacterial activity is also maintained.

The final inevitable deficit must be met by an intelligent use of nitrogenous commercial fertilizers.

ALBERT R. MERZ, *Bureau of Chemistry and Soils.*  
LEWIS T. LEONARD, *Bureau of Plant Industry.*

**P**ARLATORIA Date Scale Nears Extermination in Cooperative Campaign When several varieties of date palms were brought into this country 30 to 40 years ago in an effort to find some that were adapted to the desert areas of the Southwestern States, a scale insect, the *Parlatoria* date scale, was accidentally introduced. This insect thrived in its new environment, and it was soon evident that dates could not be grown with profit unless an economical method of controlling the scale were devised.

After considerable experimental work, it was found that control, that is, keeping the insect down to such numbers that the production of marketable fruit is possible, would be very expensive, probably prohibitive in cost. Several facts supported this conclusion. The scale, which breeds on the foliage and fruit, is also found on the broad leaf bases, which are protected from spray or gas by several bands of fiber. Scales in such situations would be a constant source of reinfestation, even though those on the exposed parts of the palm might be checked. Thousands of seedling date and other varieties of palms, hosts of the *Parlatoria* date scale, are used for ornamental purposes in the date-growing areas and would also serve as centers of reinfestation.

Eradication of the pest was then considered, and it was decided that the complete elimination of the insect was feasible. The hope of success was based on the belief that by careful inspection palms lightly infested with scale could be located and the scale eliminated before the infestation spread to other palms. A campaign with that in view was initiated in 1921 under a Federal appropriation for the purpose. The infestation proved to be much more persistent and difficult to handle than was anticipated. In 1928 the work was reorganized on a cooperative basis, with an increased Federal appropriation and with the California Department of Agriculture and the office of the State entomologist of Arizona actively participating with the date growers.

In order to prevent the mechanical spread of the scale, no date palms or offshoots have been allowed to be moved out of the known infested areas, and shipments within those areas have been permitted only after inspection indicated that the plants were free from scale. The heavy infestations have been located by scouting inspection over the entire date-growing area, and the light infestations detected by frequent, intensive inspections in the surrounding areas of possible spread.

As the *Parlatoria* date scale is a very small insect, about one-eighteenth of an inch long, careful scrutiny is necessary to locate light infestations. The small palms can be inspected from the ground, but to reach the fronds of the larger palms step ladders from 10 to 20 feet high are used. Garden palms too tall for inspection from a 20-foot ladder are examined from a tower mounted on a truck (fig. 48), and for tall palms in door-yards or other places not accessible by truck extension ladders are employed.

Infested palms are treated by removing all the foliage, cutting the fronds back close to the fiber, except those growing directly from the bud at the top of the trunk, which are cut back until they are about a foot in length. The surface is then scorched with a torch or sprayed with oil emulsion. Where the scale is below the fiber, it is necessary to remove the fiber and cut the leaf bases off near the trunk. This

process causes the total loss of fruit for 2 years, and the third year a crop about one-half the normal size is produced.

As a result of scouting inspection thousands of seedling date palms of no value, many infested with scale and all difficult to inspect, have been found in the desert brush or along irrigation ditches. Some of these palms have been dug out and destroyed, while others have been pruned so that they can be properly inspected.

The campaign as conducted under the cooperative agreement has been in operation since 1928, and steady progress has been made. During the fiscal year 1929, 1,591 infested palms were found on 99 properties; in the fiscal year 1930, 621 infested palms were found on 65 properties; in 1931, 231 infested palms on 31 properties; in 1932, 59 infested palms on 13 properties; in 1933, 8 infested palms on 5 properties; and in 1934, 11 infested palms on 1 property. Since 1930 the area in which intensive operations have been carried on has



FIGURE 48.—Truck and tower for inspection of tall date palms for presence of the *Parlatoria* date scale.

been gradually reduced. Only one garden is now (1934) considered an active infestation.

B. L. BOYDEN, *Bureau of Entomology and Plant Quarantine.*

## PASTURES That Are Well Managed Serve as Means of Drought Insurance

though a drought may begin during the winter, its effects are not keenly felt until the pastures dry up the following summer. Cattle sold under such unfavorable conditions have a low value for meat. If the drought is widespread, the demand for stockers and feeders is correspondingly reduced and the financial loss is thereby pyramided.

In times of drought the value of pastures and range is impressed upon farmers, ranchers, and others concerned in livestock production. Al-

The economy of pasturage as a source of feed is doubly evident when it becomes necessary to purchase substitute feed during the grazing season. This is often necessary to maintain breeding and work stock and to keep milk cows from falling off in milk production. Under ordinary conditions, wintering livestock on harvested feeds for from 4 to 6 months costs from 2 to 4 times as much as grazing them during the remainder of the season. Accordingly, shortening the grazing season even 1 month may wipe out the possibility of profits in animal production. Prolonged droughts such as that of 1934 seriously injure and may even wipe out herds and flocks entirely, leaving effects that are felt for years. Such facts, resulting from observations and experiments, point definitely toward the need of a reserve of feed suitable for grazing.



FIGURE 49.—Western ranges are improved by allowing the grass to mature occasionally. Such grass cures well on account of the light rainfall and supplies a reserve feed.

When there is more pasturage for livestock at the beginning of the season than they can use, it may be fenced off and used for hay or silage. Oftentimes pastures are better the following year as a result of this practice. Another method is to leave the growth undisturbed for use as winter pasture (fig. 49). Such a pasture has a value much above that of the actual feed obtained because it provides a place for breeding herds and work stock to exercise in the winter when meadows or other fields are not suitable. The feeding of roughage on the thick sod of a winter pasture saves labor in feeding and in hauling manure and keeps the stock out of the mud during wet weather. When the soil is frozen or dry, such feeding may be done on thin or bare spots to improve their productiveness. Reserve pastures from which livestock are excluded throughout a grazing season are helpful in reducing parasitic infection and the spreading of disease.

### Root Reserves and Reseeding

In the case of western ranges, root reserves and reseedling play an important part in increasing productivity. Through saving part of the range for drought insurance, an opportunity is afforded for seed heads to form. This unrestricted growth of the plant above ground makes possible a corresponding growth below ground. The greater root system makes more water available for the growth of the plants. The reserve of feed is correspondingly increased.

The exclusion of grazing animals from a part of the range each year is necessary to give the plants near watering places, which are commonly overgrazed, a chance to come back. This practice not only provides a reserve and increases the gross production but results also in a better quality of feed. On good range the more valuable grazing plants, which would otherwise be killed out by continuous overgrazing, are given an opportunity to maintain themselves. Even on depleted range, grazing plants will eventually reestablish themselves if livestock are excluded.

There is still another great advantage in having reserve grazing for drought insurance. Where land has any appreciable slope and is



FIGURE 50.—Closely grazed green grass is rich in proteins, minerals, and vitamins. It is also highly digestible and is therefore an excellent substitute for grain as well as roughage in feeding livestock for productive purposes.

subject to erosion, the greater the growth of grass the less erosion occurs. On overgrazed land erosion may take place as fast or faster than on cultivated soil, because loose soil absorbs water more rapidly than bare, compact soil. Keeping a good cover of grass on such land prevents practically all loss of topsoil, whereas if the field is left bare erosion may cause the rapid loss of the productive topsoil.

### Immature Grass Rich in Proteins

In reserving part of the pasture in humid areas it is possible to graze the remainder in such a way that extensive production of seed heads is prevented and the maximum quantity of highly nutritious feed is obtained. Although greater gross production of dry matter

may be obtained by allowing much of the grass to mature before it is eaten, as much or more digestible nutrients are commonly obtained from closely grazed pastures. The immature grass is comparatively rich in protein and phosphorus and is as digestible as most concentrates, whereas mature grass is considerably lower in protein and phosphorus, higher in crude fiber, and considerably harder to digest (fig. 50). Accordingly it is possible to build up a reserve of feed which may be cut for hay or grazed as an emergency measure, and at the same time to have the stock on more nutritious feed than if they had access to the whole pasture area. In general such reserves of mature grass are valuable principally for maintenance when they constitute the only feed. In maintaining more pasturage than the herds and flocks need under normal conditions, and building up a reserve of hay or grass silage, the farmer can thereby provide the cheapest form of harvested feed, and in the case of silage the most indestructible form for reserve feed. Such feed reserves tend toward more balanced, uniform, and profitable production over a period of years which may include severe droughts.

A. T. SEMPLE, *Bureau of Animal Industry.*

## PEAR Production Increased by Maintaining Adequate Soil Moisture

The maintenance of an adequate supply of soil moisture is recognized as one of the most fundamental factors in successful fruit farming, but there has been some question as to what constitutes a sufficient soil-moisture supply for different fruits, or for the same fruits in different environments. With the object of determining the soil-moisture needs of pear trees growing in heavy soil, irrigation experiments have been conducted at Medford, Oreg., by the Bureau of Agricultural Engineering for 5 years and by the Bureau of Plant Industry for 3 years.

### Frequent Irrigation Decreases Production Cost

Increased yield, secured through maintenance of highly available soil moisture resulted in a decreased production cost per box. (By available soil moisture is meant the moisture available for plant use.) The heavier orchard operation costs such as pruning, spraying, orchard heating, etc., are not materially affected by yield variations in mature trees, but the cost per box of packed fruit is naturally less as yield per tree is increased. It has been found that production costs per packed box have been decreased as much as 40 percent by irrigating frequently.

Yield is the product of number of fruits times average size. By increasing the bearing area the number of fruits per tree may be increased. Holding soil moisture highly available in all portions of the root zone results in increased vegetative growth and vigor. The Anjou pear tree usually blooms very heavily, as many as 33,000 blossoms per tree having been observed. This heavy blooming has a devitalizing effect upon the tree, and a large number of the buds that set fail to hold the fruit. This premature drop, commonly called the "June drop", is often excessive on heavily blooming trees, leaving a relatively light crop to be matured. Maintaining a highly available soil-moisture supply during the period of fruit-bud differentiation in June has

resulted in a reduction of the number of buds differentiated into fruit buds with a consequent bloom reduction the following spring. With fewer blossoms, however, fruit set and total yield have increased.

The degree of availability of soil moisture has a marked effect upon the rate of volume increase of pears on heavy soil. It has been found that the moisture content of the major portion of the root zone should be maintained at not less than 80 percent of the available capacity if maximum fruit volume is to be obtained. Allowing any material portion of the root zone to decrease below 50 percent of the maximum available soil moisture has resulted in materially lessening fruit growth and, consequently, in lower yield. These results apply only to heavy, adobe clay soil such as that which forms the major portion of the pear acreage near Medford, Oreg. Results by other workers on lighter soils indicate that such soils may become relatively much drier before decreased fruit growth occurs.

Rate of fruit-volume increase is not constant throughout the growing season. As the fruit enters the period beginning about 40 days prior to harvest its daily rate of growth increases, and in this 40-day period as much or more volume increase is made as during the 70- or 80-day period prior to the last growth spurt. It has, therefore, been found especially important to maintain highly available soil moisture during this 40-day period before harvesting. The Oregon results show that if there is sufficient residual moisture in the soil from winter and spring rains to carry the trees and fruit through the early summer without undue stress, storage water should be conserved and applied during the period when it will give maximum benefit in increasing fruit size. Maintaining highly available soil moisture by frequent irrigation during the early growth period of the fruit only and then, by withholding irrigation, allowing soil moisture to decline to a low point of availability at or prior to harvesting has resulted in a greatly decreased yield.

In those pear varieties, such as Bartlett, that usually require thinning in order to bring the crop to marketable size it has been determined that the maintenance of highly available soil moisture increases the efficiency of the leaves, and that fewer leaves per fruit are required to manufacture plant foods. By increasing leaf efficiency more pears per tree will reach marketable size, and yield will be increased.

### Importance of Roots

A positive correlation has been found between the observed density of small, visible roots and the rate of soil-moisture extraction. It has been determined for mature Anjou and Bartlett trees rooted in heavy clay soil not over 6 feet deep, that of the roots in the top 4 feet approximately 34 percent of the feeder roots are located in the upper foot of soil below the mulch, 28 percent in the second foot, and 22 percent in the third foot, a total of approximately 84 percent thus being in the upper 3 feet. Comparatively few roots extend beyond a depth of 4 feet hence if the soil-moisture content of the upper 3 feet is carefully regulated the lower rooting levels will not require much attention. At each irrigation, however, sufficient water should be added to bring the entire root zone to field capacity.

The concentration of feeder roots per cubic foot of soil is about uniform throughout the zone having inner and outer radii of 6 and 14 feet, respectively, from the trunk. On either side of that zone the

root concentration decreases slightly. This indicates that in mature pear orchards the entire soil surface should be wetted at each irrigation.

It appears that immediately subsequent to irrigation each extracting root hair may be in contact with a water film. As the roots extract moisture and the films retreat the root hair must project itself into a new moisture-extracting position or water must move to the root. It is inconceivable that roots should come in contact with each particle of soil and its enveloping water film. In fact, it is known from observation that throughout the rooting space there are areas in which no roots are visible. Therefore, it is felt that some water movement to roots must occur. Because this heavy soil is only slightly pervious the rate of moisture movement within certain limits seems slower than the ability of the roots to absorb water when it is freely available. As the water films retreat from the absorbing root surfaces an envelop of dry soil may be left around each root hair. The moisture content of this dry soil envelop may be at or very near the permanent wilting percentage while the moisture content of the soil a very short distance from the root may still be highly available but moving to the root at a very slow rate. As an increasing number of root hairs lose contact with the receding water films and the dry soil envelopes become more extended, it probably becomes increasingly difficult for the roots to secure sufficient water from the soil to satisfy plant needs. This seems particularly the case during hot weather and during periods of maximum vegetative and fruit growth.

Since soil-moisture content, determined with our present technic, is the average moisture content within and without these dry soil envelopes, the indicated soil moisture may be actually higher than that immediately in contact with the root hairs.

Soil moisture in cropped land is never static. The forces of gravity, surface tension, and suction pull by roots are continually at work distributing and readjusting moisture in the soil. The Oregon irrigation experiments show that soil-moisture conditions may be profitably controlled.

R. A. WORK, *Bureau of Agricultural Engineering.*

**P** HONY Peach Disease Control is Promoted by Destroying Wild Peach Trees Although the peach is not native to the United States, the climate and soil of the Southeastern States are so well adapted to its needs that it became readily naturalized there at an early date. From the extensive home and commercial orchards that were planted, trees have escaped from cultivation and produced prolific numbers of "wild" seedlings. Today, in Georgia alone there are many millions of these wild seedlings, ranging from small bushes to old trees 30 feet or more in height, scattered throughout the State, and similar conditions exist over practically the entire region. Occasionally these seedlings are found on terraces, particularly in old, abandoned fields, and along fence rows. More commonly, however, they grow along the edges of woods, intermingled with elderberry, persimmon, alder, and sweetgum, and frequently almost smothered with honeysuckle. In such positions they are inconspicuous, and it is seldom that a landowner realizes their presence, even if he is an orchard owner. Yet these wild peach trees constitute a serious menace to the successful



operation of a commercial peach orchard, because they are liable to attack by all the insects and diseases that attack cultivated peaches and serve as a reservoir of infestation and infection for the commercial orchards, no matter how well these are cared for.

Within 2 years after the commencement of the campaign to eradicate the phony peach disease, it was found that numerous orchards that had been thoroughly cleaned up were being reinfected from some outside source. Surveys and careful scouting around such plantings brought to light the presence of infected wild peach trees growing near the orchards, and it was evident that the disease could not be controlled permanently in the orchards unless it was also controlled in its wild hosts.

First discovered during the nineties, the phony peach disease has already caused tremendous losses to growers in central Georgia. Prior to the commencement of the eradication campaign, in 1929, it had become so prevalent in many orchards as to bring about the abandonment or destruction of over a million trees and had forced several growers into bankruptcy. The disease has not restricted its ravages to one locality, however, but has been steadily spreading and increasing in importance, until it now occurs in 13 States. It may prove to be as serious throughout the country as it has already shown itself to be in central Georgia.

Thus the future of the peach industry of the country might well depend on the control of the phony disease in wild peach trees. An annual inspection of these millions of seedlings was an obvious impossibility. The trees were worthless, even when not harmful, and the obvious thing to do was to destroy them outright, but this could be done only by means of large forces of laborers. No appreciable good effect could be anticipated with the inspection force available for the work.

When the situation appeared most hopeless, the Emergency Relief Administration set up an organization to furnish immediate work for thousands of the unemployed. Among other Federal projects, they authorized one for the eradication of wild peach trees in Georgia and Alabama, where the phony peach disease is seriously prevalent, and where there are large commercial plantings or important peach-growing nurseries.

In Georgia the Civil Works Administration furnished a force of 948 men, who worked in 42 counties. In Alabama 111 men were employed, and work was carried on in 3 counties. The projects were set up shortly after the middle of December and continued through February 15, at which time the Federal projects terminated. Beginning on February 16, State projects were set up, furnishing 448 men in 12 counties in Georgia and 61 men in 3 counties in Alabama. Work ceased in both States on March 29.

### Results of Campaign Satisfactory

These forces destroyed a total of 4,724,659 trees, 4,248,802 in Georgia and 475,857 in Alabama. While it was not expected that every wild tree could be found and destroyed in a single inspection, the results of this first campaign were very satisfactory. In a few counties the majority of the seedlings were eradicated, and in all of them a good proportion of the wild trees growing close to commercial orchards were removed. Because of the long incubation period of the

phony peach disease, the direct effect of this work on the spread of the disease will not be evident for 2 years. However, the destruction of the wild hosts must be of direct benefit, since it removes a source of infection. Indirectly it has already assisted materially in the eradication campaign. With the majority of the seedlings gone in several counties, there is no longer any need to devote much time to them, and this time can now be given to commercial-orchard inspection, making it possible to cover many more orchards than could be handled formerly.

Although the purpose of the campaign was to control the phony disease, it has brought other benefits. All insects and diseases that attack a crop add materially to the cost of producing that crop, and frequently are the deciding factor between a profit and a loss. The destruction of these wild peach trees, which harbor not only the phony disease but all the other enemies of the peach as well, should aid the growers in controlling all the pests that attack their crop and thus enable them to produce a better quality of fruit at some decrease in cost of operation.

The project received the hearty support of all concerned and is considered to have combined successfully immediate unemployment relief with permanent agricultural and community benefit.

W. F. TURNER, *Bureau of Entomology and Plant Quarantine.*

**P**HOSPHATE Blast Furnace is Nucleus for Balanced Fertilizer Trade in West Were it not for their accessibility to sources of fertilizers, certain eastern and southern agricultural lands would be called marginal more often than is now the case. These lands have long been served by the phosphate deposits of Florida and Tennessee; by the potash mines of Europe, and by the nitrate deposits of Chile, with products deliverable at many close-by ports by water transportation, and by coke ovens, widely distributed, which supply byproduct ammonia at low production and distribution costs. Hence soil fertility in these areas has long since become not a matter of nature but of soil management. It is not a coincidence that this area of relatively heavy fertilizer application is accessible to relatively low-cost supplies.

The term "heavy application" is used comparatively. The comparison is with the vaster areas of the West and Middle West, where at no time have fertilizer supplies been accessible except when imported from long distances at freight charges representing a disproportionate part of their cost. This cost is not necessarily prohibitive, for cost must be measured in terms of profits from use; but relatively fertilizers are high in the West and unquestionably their costs have been an effective deterrent to their more general use in that section.

Federal surveys have determined the location and extent of the fertilizer resources of the West. Considerable research has been conducted in the Fertilizer Technology Division of the Bureau of Chemistry and Soils to develop feasible methods for their commercial utilization—methods capable of employing locally available raw materials, and yielding high-grade products susceptible of low-cost distribution. Abundant supplies of raw materials have been found for the production of potash, phosphates, and nitrates, the essential ingredients of

commercial fertilizers; and substantial progress has been made in the development of an appropriate technology.

Potash industries are now established in southern California and New Mexico. They produce with highly developed technology an excellent grade of potassium chloride. Despite their distance from the East, and the resulting high freight charges, they supplied in 1933 almost 40 percent of the potash used in the East. Abundant raw materials in addition are represented by the polyhalite deposits of Texas and New Mexico, the alunites of Utah, the leucitic lavas of Wyoming, and the natural brines of Nebraska and Utah.

Of phosphate rock there is a superabundance. The phosphate deposits of Idaho, Wyoming, Montana, and Utah represent the world's greatest known phosphate reserves.

The great coal deposits of Wyoming, and the supplies of natural gas of that and other States, represent inexhaustible sources of basic raw materials for nitrate production from the air by the modern synthetic methods. Ammonia synthesis has freed the farmers of this country from exclusive dependence on foreign nitrate deposits, and brought close to the farm an inexhaustible supply at costs far below those formerly paid. But the great nitrate plants of the East, while at the door of the eastern farmer, are still far removed from the farms of the West.

Here are raw materials of such abundance, diversification, and distribution as to offer the potentialities for fertilizer manufacture adequate to the all-time needs of western agriculture.

In their utilization there should be applied a technology representing the most recent developments in chemical engineering. These developments involve a radical departure from established processes. The three basic plant-food elements must be combined into high-analysis compounds to eliminate freight charges on useless ingredients, so as to make wide distribution possible. The operation must be profitable if private capital is to be employed. These are problems with which the Department is now engaged.

As the American fertilizer trade is organized, the mixture sold is designed to supply the plant-food elements in which the average soil is apt to be deficient, and to which the growing plant makes most ready response. Without discounting the relative importance of any one plant food, emphasis has been placed in the past on phosphates. Many years of experience on a diversity of soils and crops has shown that a mixture is so much better than the separate ingredients used singly, that for the sale of one, supplies of the other two are essential. For a satisfactory fertilizer industry for the West, therefore, the production of all three elements is required. At present, potash produced in the West must seek its market in the East where supplies of phosphates and nitrates are abundant.

#### **Blast-Furnace Smelting of Phosphate Rock**

Accordingly, the Department has devoted special attention to phosphate production and has developed in its laboratories the technology of blast-furnace smelting of phosphate rock to yield agricultural phosphates. Because this process requires cheap coal as a fuel, a location has been sought where phosphate rock and coal are to be found close together. One location is the Green River section of Wyoming, which is within shipping radius of the phosphate deposits of both Wyoming

and Idaho. Close by are the leucitic lavas from which potash can be recovered by smelting; or potash can be delivered to this section from the mines of New Mexico or from California en route to the eastern market.

With the blast-furnace process now under large-scale demonstration in comparison with the electric-furnace method by the Tennessee Valley Authority at Muscle Shoals, Ala., the question of profitable operation will be answered. It appears to be the most feasible method of processing the western phosphates, and is designed specifically for that use.

As a nucleus around which to build a well-balanced fertilizer industry, the phosphate blast furnace affords the basis of new activities that bid fair to become an essential part of the industrial and agricultural development of the Northwest which now seems certain as the result of current water-power and irrigation enterprises. Such an industry would assure to that vast area the many, enduring benefits represented by abundant supplies of low-cost plant food.

J. W. TURRENTINE, *Bureau of Chemistry and Soils.*

**P**HOSPHATE Fertilizer Prepared by Treating Phosphate Rock With Steam at High Temperatures Domestic phosphate rock consists principally of fluorapatite, an insoluble compound which contains calcium phosphate and fluorine. Recent laboratory studies have shown that when phosphate rock, containing about 5 to 10 percent of silica, is heated in the presence of water vapor at about 1,400° C., the fluorapatite is decomposed, upwards of 95 percent of the fluorine is volatilized and 80 percent or more of the phosphoric oxide ( $P_2O_5$ ) is converted into the citrate-soluble (available) condition.

The results of experiments with Florida land-pebble phosphate rock show (fig. 51) that no increase in the citrate solubility of the phosphoric oxide occurs until about 63 percent of the total fluorine is volatilized. From that point, however, the citrate solubility of the phosphoric oxide increases with increase in the percentage of the total fluorine volatilized. Removal of only 30 to 60 percent of the fluorine causes the citrate solubility of the phosphoric oxide to decrease below that of the phosphoric oxide in the untreated rock.

The process seems to have possibilities for the production of cheap phosphate fertilizer. It can be carried out in direct-fired rotary kilns and is applicable to all of the regular commercial grades and types of phosphate rock produced in this country at present.

### Properties of Calcined Phosphate

Some of the properties of the product, which for convenience may be called calcined phosphate, are summarized briefly, as follows:

The product is obtained in the form of a sintered or semifused clinker which, unlike superphosphate, requires no aging and needs only to be ground to the desired fineness for fertilizer purposes. It is practically insoluble in pure water, is weakly alkaline in reaction, has no deleterious effect on fertilizer bags and machinery, and should prevent, to a considerable extent, the increase in soil acidity caused by the use of ammonium salts as fertilizers. Although the alkalinity of the mate-

rial is sufficient to cause some loss of ammonia from ammonium salts in fertilizer mixtures, it is believed that it will be possible to overcome this disadvantage.

The properly prepared material should contain about 30 percent or more of citrate-soluble (available) phosphoric oxide, as compared with about 19 to 21 percent in the best grades of ordinary superphosphate. The chemical nature of the available phosphate in calcined phosphate

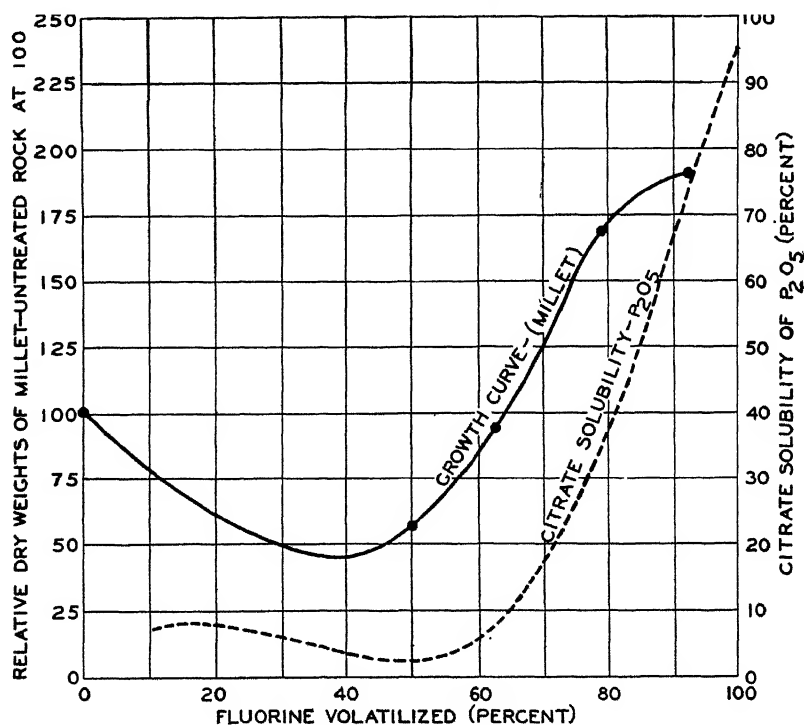


FIGURE 51.—Relation between volatilization of the fluorine from phosphate rock and the citrate solubility and nutrient value of the phosphoric oxide ( $P_2O_5$ ). Until more than 60 to 65 percent of the fluorine is volatilized from phosphate rock by the calcination process the solubility of the phosphoric oxide in neutral ammonium citrate and the growth of millet are depressed below the results obtained with the raw phosphate rock. With greater removal of the fluorine both citrate solubility and plant growth are increased. (See fig. 52.)

is not definitely known but it is believed to be similar to that of the phosphate in basic slag, the phosphatic byproduct of the smelting of high-phosphorus iron ores, which is widely used as a fertilizer in Europe. Calcined phosphate not only is superior to superphosphate in physical properties but it markedly improves the physical properties of fertilizer mixtures in which it is present.

Because of its low fluorine content, calcined phosphate has possibilities as a substitute for bone meal in the preparation of mineral feeds for livestock. Also, the fluorine volatilized during the manufacturing process is a possible source of fluorine compounds for industrial and technical purposes and for use as insecticides.

Finally, the high citrate solubility of calcined phosphate indicates that it should be an efficient fertilizer material.

## Plant-Food Value of Calcined Phosphate

In order to determine the plant-food value of calcined phosphate, greenhouse pot experiments were carried out with millet as a test crop, using a phosphorus-deficient Norfolk loamy fine sand soil. In the preparation of the calcined phosphates used in these tests about 50 to 97 percent of the fluorine content of the phosphate rock was volatilized and the citrate solubility of the phosphoric oxide in the products ranged from about 7 to 86 percent. Tests were also made with ordinary superphosphate and dicalcium phosphate as standard sources of phosphoric oxide. The phosphates were applied in 4-12-6 fertilizer mixtures at the rate of 240 pounds of total phosphoric oxide

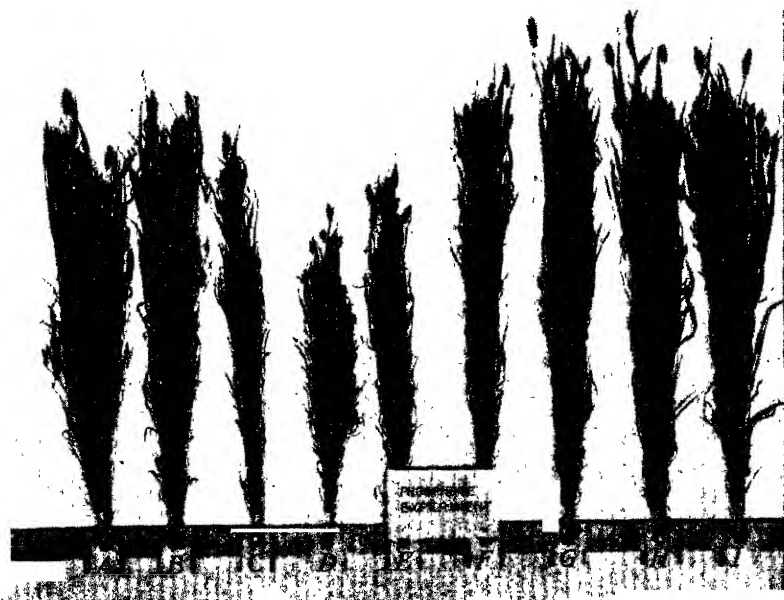


FIGURE 52.—Growth of millet with calcined phosphate. Phosphate treatment: 1, superphosphate, 2, dicalcium phosphate; 3, raw Florida pebble phosphate rock, 3.85 percent fluorine; 4, calcined phosphate, 2.08 percent fluorine; 5, calcined phosphate, 1.49 percent fluorine; 6, calcined phosphate, 0.85 percent fluorine; 7, calcined phosphate, 0.4 percent fluorine; 8, calcined phosphate, 0.27 percent fluorine; 9, calcined phosphate, 0.1 percent fluorine. The percentages of fluorine removed from the phosphate rock in the preparation of the calcined phosphates were as follows: No. 4, 50; no. 5, 64; no. 6, 79; no. 7, 90; no. 8, 93; and no. 9, 97.

per acre, equivalent to 1 ton of the complete mixture per acre. The growth of millet resulting from the different treatments is shown in figure 52.

Calcined phosphates from which only 50 to 64 percent of the fluorine had been removed (groups 4 and 5) gave smaller crop growths than did the untreated phosphate rock (group 3). With the removal of greater percentages of fluorine larger increases in growth were obtained (groups 6 to 9), and the calcined materials from which 90 to 97 percent of the fluorine had been removed (groups 7 to 9) gave better results than did ordinary superphosphate and dicalcium phosphate (groups 1 and 2).

As shown in figure 51, there is a more or less close correlation between the citrate solubility and the plant-food value of the phosphoric

oxide in calcined phosphate, and both of these properties are correlated with the proportion of the fluorine removed during the manufacturing process.

Other greenhouse tests with millet and other crops substantiate the results presented here, in showing that the fertilizer value of calcined phosphate, with 90 percent or more of the fluorine removed, compares favorably with that of superphosphate and dicalcium phosphate.

K. D. JACOB, B. E. BROWN, and F. R. REID,  
*Bureau of Chemistry and Soils.*

**PONDEROSA Way—A Firebreak** Between the Lowlands and the Higher Timbered Belt

On the long slopes rising gradually from the central valleys of California to the mountain summits on the east, the United States Forest Service is completing a 650-mile firebreak, known as the Ponderosa Way, extending from Pit River on



FIGURE 53.—The Ponderosa Way, a firebreak between the lowlands and the timber on higher elevations.

the north to Kern River on the south. Seen from the air the Ponderosa Way is a wide strip cleared of all vegetation separating the belt of grassy woodland and chaparral of the low country from the timber on the higher elevations. In some places it follows the contour of the hills, in others it dips into the canyons and gulches (fig. 53).

The Ponderosa Way takes its name from a commercial timber tree, formerly called western yellow pine, which forms over 60 percent of the total stand of timber in California. Extensive in its range, ponderosa pine is the first commercial tree encountered as one climbs from the hot, dry lowlands to the higher country. Formerly it reached much further down into the valleys but lumbering and forest fires have now driven it back many miles.

Firebreaks are built to stop the front of an advancing fire, and are simply lanes cleared of all inflammable material. Their width depends upon various factors such as the height of the trees, shrubs, or other vegetation on either side and the slope of the ground. They have several uses as a fire-protection measure. When a forest fire is advancing slowly the break may stop it. At times they afford a way for transportation of fire fighters and equipment. Where the fire is running with such force that it threatens to leap the firebreak, then the break may be used for backfiring, a method of fighting fire with fire by burning the material on the ground so the main blaze will have nothing to feed on. Backfiring must always be done from a safe place such as the cleared line afforded by a firebreak.

#### Varying Width of the Firebreak

The width of the Ponderosa Way varies from 50 to 200 feet depending on the type of cover and the slope of the ground. On narrow

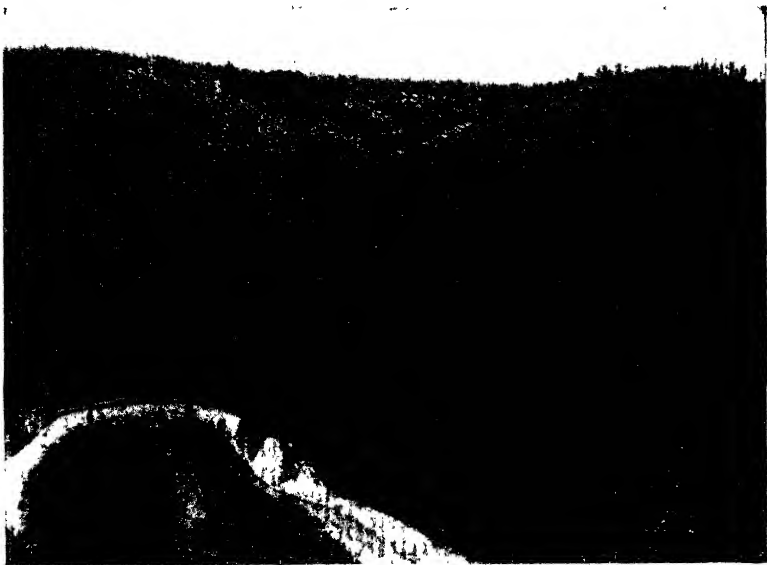


FIGURE 54.—A firebreak which may be used for the transportation of men and equipment.

ridges it is 50 feet wide, on broader ones 150 feet. On contours and in dangerous places it is 200 feet or more. In the center of the way is a strip about 20 feet wide cleared to mineral soil and graded where necessary to form a road or truck trail so that motor vehicles and tank trucks can travel over it. In places old existing roads are used for this central strip. On steep ground the truck trail is built separately but close to the Ponderosa Way so that as much of the way as possible will be accessible to motor transportation (fig. 54).

Twenty years ago similar firebreaks were built along the western boundaries of the Sierra and Sequoia National Forests in California. They proved their value many times as a defense against fires originating in the low country. The work done by the State labor camps



in the winters of 1931 and 1932 under the direction of the California Division of Forestry revived the idea of protecting the timber belt by a firebreak, and resulted in the Ponderosa Way project.

During the winter of 1933-34 about 24 C. C. C. camps, 10 N. I. R. A. or Public Works camps, and some C. W. A. labor cooperated to complete 75 percent of the Ponderosa Way. Six C. C. C. camps were working on the Ponderosa Way in the summer of 1934 and by the spring of 1935 the project should be complete.

Forest officers and the public believe that this is one of the most important measures yet undertaken for the protection of timber, watersheds, range lands, and recreation areas in the national forests of California.

R. W. AYERS, *Forest Service.*

**PREDATORS and Rodents** That wild animals may be carriers  
**are Factors in the** of human diseases, notably bubonic  
**Spread of Disease** plague, spotted fever, and rabies,  
has long been recognized by medical  
authorities. Investigations during the past few years have added  
other diseases to the list, and now it is becoming more generally appreciated that wild animals play an important role in the health as well as the economic life of man. The Bureau of Biological Survey has done much to learn of the relationship of wild animals to man and to aid in dealing with outbreaks of various diseases by controlling the wild-animal hosts. These diseases have included tularemia, Rocky Mountain spotted fever, endemic typhus fever, rabies, and bubonic plague.

Tularemia has been found to be transmitted, usually by insects, from infected rodents—principally wild rabbits—to man. One of the most recent of the outbreaks, which have been rather common throughout the West, occurred in Meagher County, Mont., late in April and early in May of 1934. Jack rabbits died in great numbers, and dead ground squirrels also were noted. Approximately 200 head of a band of sheep grazing in the area died before the cause was discovered to be tularemia. Investigation by specialists of the Public Health Service, the State board of health, and the Bureau of Biological Survey demonstrated that wood ticks, present in great numbers, were responsible for the transmission of the tularemia from the diseased rodents. The sheep were sheared, dipped, and moved to another range, and the Biological Survey inaugurated a campaign to eliminate the rabbits and ground squirrels, labor and funds being supplied for the purpose by the State emergency relief administration.

Rocky Mountain spotted fever, long one of the dreaded diseases of the West, has been transmitted to humans by wood ticks, with rodents and other wild animals acting as intermediary hosts. Alarm has been felt by health authorities in the Eastern States because of the recent occurrence there of this disease, heretofore considered as a western malady only. Cases have been reported in Pennsylvania and Maryland. A few deaths occurred near the District of Columbia.

Endemic typhus fever, while less important as a cause of death than epidemic typhus, has for many years been a serious disabling disease in the South, and it increased at an alarming rate from 1931 to 1933. The State health departments of Alabama, Georgia, and Texas re-

ported a total of 250 cases in 1931, 772 in 1932, and 1,747 in 1933. As the result of intensive investigations, at the bedside, in the field, and in the laboratory, medical officers of the United States Public Health Service found that this disease has an animal reservoir, chiefly in the common rat, and that under suitable conditions the disease is transmitted from rat to man by certain of the rat fleas. It had been previously shown by specialists of the Bureau of Entomology and Plant Quarantine and of the Baylor University College of Medicine that the tropical rat mite also is capable of transmitting this disease.

### Rat-Control Project

With this knowledge and with an allotment of 10,000 workers by the Civil Works Administration the Biological Survey and the Public Health Service carried on an intensive rat-control joint project between December 1933 and March 31, 1934. A total of 747,608 separate premises were treated under the Biological Survey supervision in Texas, Alabama, and Georgia with more than 800,000 pounds of red-squill rat bait in addition to the use of 400,000 traps. It is estimated that not less than 7,500,000 rats were thus destroyed.

The number of typhus-fever cases had increased 300 percent in Alabama during 1932 and 1933, and again in 1934 up to the conclusion of the rat-control campaign. Had the same ratio been maintained there would have been 630 cases reported from the close of the campaign, in March, to July 1. Instead there were only 47 cases, or an indicated decrease of 93 percent. In Georgia and Texas a corresponding decrease also had taken place. The economic saving of produce and property in the 136 counties covered has been estimated to be approximately \$8,750,000.

### Rabies Among Wild Animals

Rabies is frequently contracted by coyotes and other predators, probably largely from dogs, and may thus be spread among other wild animals and to man. Outbreaks are difficult to control, and it is only through constant vigilance and the work of the expert force of trappers maintained by the Biological Survey that it has been possible to check them. One of the most serious outbreaks in several years occurred in southern Lea County, N. Mex., in February 1933, and within a month it had assumed alarming proportions. In one case, 18 of 22 sheep bitten by coyotes showed symptoms of rabies and were killed by the owner. Several bulls held in a feed lot were attacked by a rabid coyote, but recovered after being given serum treatment. A milk cow at Mesquite, N. Mex., developed the disease, and an entire family that had been using its raw milk was given Pasteur treatment. One trapper bitten by a rabid coyote also received treatment, and another attacked by a coyote killed the animal before it could bite him. Bureau workers, in cooperation with local authorities, instituted a vigorous coyote-trapping and poisoning campaign, and within a few months the epizootic was stamped out. In Nevada about the same time the loss of 23 cattle from rabies in Paradise Valley led to prompt coyote-control measures that stamped out the disease and prevented further serious losses.

In August 1934 officials of the health and game departments of Maine urged that aid be given in controlling an outbreak of rabies near Farmington. The Biological Survey's expert learned that the trouble was localized in a largely wooded farming section, not over 8 miles in diameter, where 10 foxes with evidence of rabies had been killed since March. One boy, 3 cows, and 4 dogs were known to have been bitten by the foxes, and 2 of the cows had died. A rapid spread of the disease among the numerous large and small wild animals was threatened, but acting on the Bureau's recommendation the State game department immediately employed 10 trappers to remove the possible carriers from the locality. By October 1 these men had taken 162 foxes, 107 raccoons, 510 skunks, 117 porcupines, 9 minks, 67 woodchucks, and numerous squirrels, muskrats, weasels, and vagrant cats. This action brought the situation under control.

### Bubonic Plague Among Ground Squirrels

Bubonic plague has long been prevalent among ground squirrels in California, but Federal and State health and agricultural officials have cooperated in controlling these rodents about resorts, camp grounds, and other places frequented by people, and the human cases have been exceptionally few. It has been definitely demonstrated in California that systematic, intensive rodent-control campaigns must be carried on each year if the health and welfare of the State are to be protected, and recent control work made possible by E. C. W. and P. W. A. allotments has thus been of great benefit.

Disease control, in addition to its importance to public health and man's economic interests, is part of wildlife management. Tularemia epizootics, for instance, have virtually wiped out cottontail rabbits over large areas, and muskrats, gray foxes, quail, and grouse have been affected with this disease, which has caused widespread alarm among hunters and trappers and reduced the sale of hunting licenses.

ALBERT M. DAY and J. E. SHILLINGER,  
*Bureau of Biological Survey.*

**R**ICE When Treated for Milling Acquires Desirable Qualities The most valuable product obtained in the milling of rice is the whole kernels, or head rice. The medium- and short-grain rice varieties are more extensively grown in the United States, owing largely to a higher yield of head rice in milling, than the long- and long-slender-grain varieties. The better long- and long-slender-grain varieties are, however, quoted on the principal clean-rice markets at higher prices than the medium- and short-grain varieties. If the milling quality of the long- and long-slender-grain rices could be improved it should lead to a larger production and consumption of these types in the United States.

### The Process

In certain rice-producing countries of the Far East some rough rice is treated prior to milling. It is claimed that the treated rice mills better, and that the milled rice has a more pleasing and distinctive taste, contains more vitamin B, keeps better, and is more nourishing

than untreated rice. The process consists in soaking rough rice in water, then steaming it under pressure. After steaming, the rice is dried and milled. The type or types of rice that are so treated in the Far East and the exact procedure followed are not generally known. It appears that the method of treatment varies more or less in different countries, but the effects of the treatment are essentially the same.

In experiments conducted by the writers on parboiling rough rice the long-grain varieties Fortuna, Rexoro, Edith, and Iola, the medium-grain variety Blue Rose, and the short-grain varieties Colusa and Caloro were used. These, with the exception of Iola, are important commercial varieties in the United States. Rexoro is a long-slender-grain variety of the same general type as the Patna rice from India. The more extensive tests were made with Fortuna and Rexoro.

The rough rice was first soaked in water, drained, and then steamed under pressure. The treated samples were thoroughly air-dried before they were submitted for shelling tests.

Treated and untreated samples of each variety were sent to the Federal-State rice grading office at Crowley, La., for shelling tests. These were made with the Smith shelling device, which indicates the probable yield of head rice that may be obtained from a given lot of rice when milled.

### Results of Experiments

For the samples of rough rice soaked for 24 hours at room temperature and steamed for 25 minutes the increase in the indicated yield of head rice ranged from 2.6 percent for Blue Rose to 25.5 percent for Rexoro; for Fortuna the increase was 9.8, for Iola 19.9, and for Edith 23.4 percent. The increases for Colusa and Caloro, steamed 45 minutes, were 19.1 and 28.0 percent, respectively.

In the more extensive experiments, samples of Fortuna and Rexoro were soaked at constant temperatures and steamed for different lengths of time. The increases in the indicated yields of head rice were essentially the same regardless of the length of the soaking period, the temperature of the water in which the rice was soaked, or the length of the steaming period. The color and texture of the treated rice were, however, affected by these factors.

The average increase in indicated yield of head rice for all Fortuna samples soaked at constant temperatures and steamed for different periods was 29.7 percent, and for all Rexoro samples 25.2 percent.

### Color of Treated Rice

The treated rice obtained in these experiments when milled varied in color from translucent to amber, whereas untreated milled rice is white or more or less opaque. However, even though the treated milled rice is darker than the untreated, it is nearly as white when boiled.

### Cooking Quality

Treated kernels when boiled retained their shape better than did untreated kernels of the same variety. When boiled and sterilized in water or canned soup the treated kernels retained their shape much better than did the untreated kernels of the same variety or those of Patna rice (fig. 55).

A considerable quantity of Patna rice grown in India is imported duty free each year largely for use in commercially canned soups. In

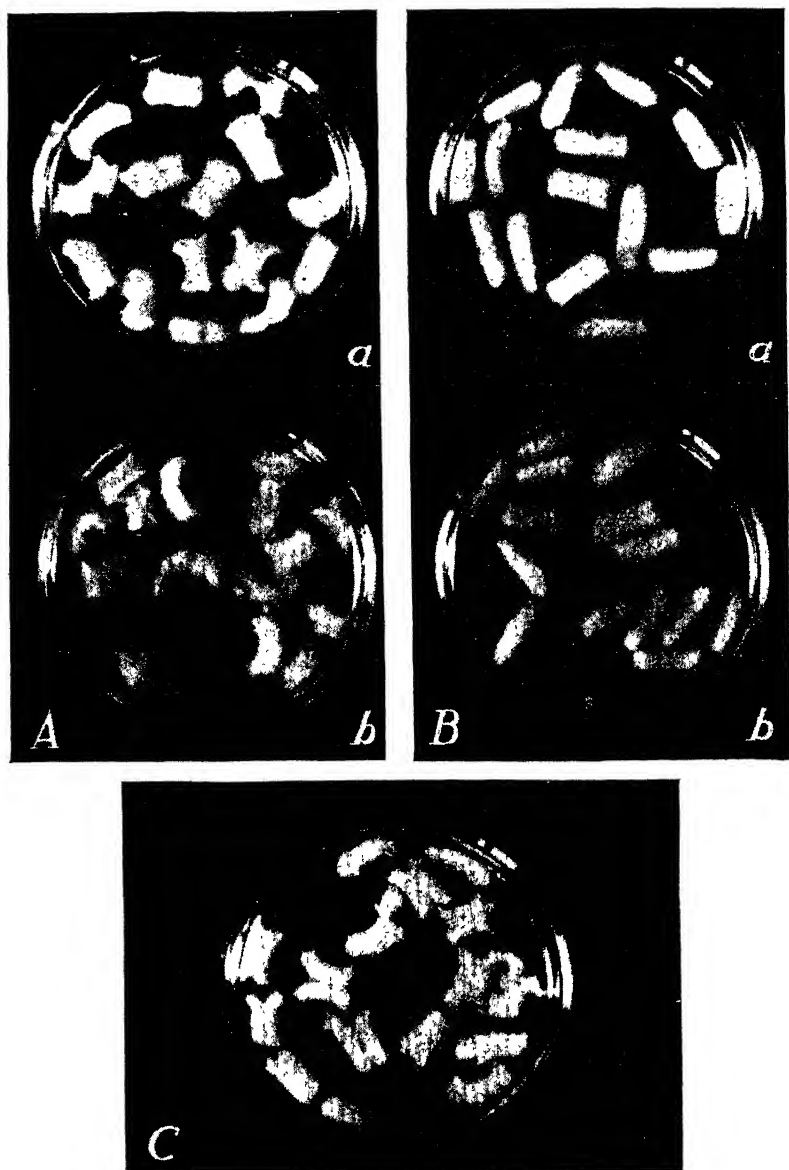


FIGURE 55.—Samples of boiled and sterilized rice: *A, a*, Fortuna untreated; *b*, Rexoro untreated. *B, a*, Fortuna parboiled; *b*, Rexoro parboiled. *C*, Patna.

the past American-grown varieties that have been compared with Patna in canned soups have not been so satisfactory. However, in comparing parboiled Fortuna and Rexoro rices with imported Patna,

the former appear to have all the desirable characteristics of the latter when boiled and appear even more desirable for use in canned soups.

The information obtained shows that treated rice has desirable characteristics that are at present largely unknown to the rice trade of the United States.

JENKIN W. JONES and JOHN W. TAYLOR,  
*Bureau of Plant Industry.*

**R**IVER Gage Work Pushed to Improve Flood Forecasting In September 1933 \$150,000 of emergency funds was allotted to the Weather Bureau to repair and improve its river gages. Since that time the Bureau has been engaged, in cooperation with other governmental agencies, in standardizing and perfecting the gages used in river-stage and flood forecasting, and in installing gages to determine the relation of stream flow to precipitation.

The Weather Bureau has always done its river-gaging work under a handicap. Funds had never before been available for the construction at one time of more than a few gages of a substantial and modern type. A large part of the money that could be allotted for gages had to be used in maintenance, because every flood partially wrecked a comparatively large number of the structures. Of all the gages then in use, only four gave a continuous record of river stages.

The emergency allotment is, therefore, not only helpful in giving employment in several hundred widely scattered small towns, but it is furnishing to the Weather Bureau a network of river gages that will be of lasting benefit to the country.

#### Progress of the Work

On June 30, 1934, there had been erected 76 staff gages, 9 of the chain and weight type, 97 of the wire-weight, and 47 continuous recorders, a total of 229. The work was finished by December 31, and all of the gages maintained by the Weather Bureau either were replaced or were thoroughly inspected and found not in need of repair.

In addition to the 437 gages that are owned by the Weather Bureau there are 272 from which reports are furnished to the Bureau by other agencies, principally the Engineer Corps of the Army. This gives a network of 709 gage reports available for river-stage and flood forecasts. However, only 482 of the reports are made daily; 129 are furnished only during the months that may be considered to embrace the flood season, and 98 are received in times of threatened or actual flood.

The accuracy and timeliness of the river forecasts of the Bureau have, for a long time, been considered quite satisfactory by the general public. But the officials of the Bureau have always realized that the system under which the forecasts are made has an inherent disadvantage in that it has never been expressed in standardized formulas. Each forecaster has a set of rules for the rivers in his district, but these rules must be applied in individual cases through the experience of the forecaster. It is impossible for a forecaster to put a large part of his knowledge on paper and, when he is no longer available for this work, his successor must begin immediately to make an intensive study of the rivers in his district, and the effect on the rivers of rains

of varying intensity and distribution. He must also become familiar with the relation of run-off to precipitation as it may be modified by the season of the year. The condition of the soil and numerous other things must be given consideration. Even an intensive study does not thoroughly qualify a forecaster, but actual experience must be had before he feels sure of himself.

Discharge observations or rating curves have been used to a very minor extent in Weather Bureau work. It has not been possible to employ them in any large way because they were not available. However, since 1922, and particularly since 1927, much stress has been placed on flood protection, and, in the last few years, inland navigation and power development have progressed steadily. Hence information in regard to the quantitative flow of streams is increasing more rapidly than ever before, and a further important increase will come with the continuously recording gages put in with Public Works funds.

### Stream-Flow Measurements on Important Rivers

The Weather Bureau makes no stream-flow measurements. However, through the cooperation of the Geological Survey, rating curves will be available for strategic points on the important rivers of the country, where recording gages are situated, and the officials of the Bureau will begin a study of the application of rating curves to river-stage and flood forecasting. It is realized that these curves can be no more than an important aid; that current meteorological information will always be indispensable in river forecasting, and that if, in rehabilitating and standardizing the network of river-gage stations, the meteorological stations are neglected, no satisfactory measure of success can be attained. But it is thought the study and application of the curves will remove a reasonable amount of the personal element that now surrounds forecasting, will make it possible to refine forecasts somewhat more than at present, especially on the large rivers, and will enable a forecaster to leave for his successor formulas that are based on sound and well-understood principles.

River-stage and flood forecasting is the primary purpose of the river-gage service, but the necessity for adding another feature, the determination of the relation between stream flow and precipitation, has been growing and has increased rapidly in the last year or so. A knowledge of this relation is necessary in making plans for power dams, irrigation projects, flood prevention and control, and farm and city water supplies. However, reliable statistics regarding the relation are too scant to be of great value, and the dry weather that has prevailed over most of the country in the last few years has shown engineers in a most positive way that sound plans for the water conservation, so necessary to agriculture and the general public, cannot be made without a definite knowledge of the volume of water streams may be expected to deliver in disastrously long periods of insufficient rain.

### Run-Off Data Useful in Economic Planning

A knowledge of rainfall is fundamental, but this knowledge, to be of full advantage, must be extended to show what becomes of the rain after it is received by the ground, and a definite determination of the relation of stream run-off to precipitation throughout the country would prove inconceivably valuable in planning the economic life of

the Nation. The climatological service of the Bureau collects precipitation data for the entire United States, and these data, in conjunction with the stream-flow rating curves prepared by the Geological Survey, will make possible the determination of this highly important relation between stream flow and precipitation.

M. W. HAYES, *Weather Bureau.*

**S**CREW-WORM Invasion of South Necessitates Modified Farm Practices The screw-worm problem in this country has been intensified by the spread of this pest into the Southern States during the summer of 1933. This insect is a native of North America, and it occurs in destructive numbers every year in the Southwestern States, where it is one of the most important problems of livestock raisers. All kinds of livestock, wild animals, and even man are attacked by this pest.

The screw-worm flies are bluish green with three black stripes on the back and reddish-yellow face. There are two species of these flies. One lays its eggs in fresh wounds on any part of the body, while the other breeds in carcasses of animals and in old wounds on livestock. The larvae, or worms, of both species soon hatch and penetrate the tissues, in which they complete their growth in about 6 days. Then they drop to the ground and there enter the pupal or resting stage, from which the adult fly emerges a few days later.

The invasion of the Southeastern States produced an acute phase of this problem, because the farmers in that region were unfamiliar with the insect and its depredations, and many of them were financially unable to deal adequately with the pest. Under these circumstances it is not surprising that a condition approaching hysteria resulted in many localities.

The pest appeared in northern Florida and southern Georgia in 1933 and caused considerable losses during the fall. In May 1934 infestations of all classes of livestock began to appear in this and adjacent territory. The ravages of the pest extended rapidly, and as the season advanced most of the State of Florida was involved and cases occurred in about 120 counties in Georgia and throughout the southern half of Alabama, Mississippi, and Louisiana. A good many cases also occurred in southeastern South Carolina, although the infestation there was not general. The belt of heavy infestation extended westward along the coastal area into southeastern Texas. A considerable number of animals in northwestern Iowa and some in central and southern Indiana were also infested with screw worms, but these appeared to be isolated areas of infestation. The pest is rarely found so far north.

#### Total Loss Stupendous

It has not been possible to gather definite information on the number of screw-worm cases or the losses due to this outbreak in the Southeast, but it is evident that the total loss has been stupendous. In many of the coastal counties in Texas, Louisiana, Mississippi, and Alabama, the stockmen report that their loss among sheep has reached 30 to 40 percent of their holdings and that the loss among their hogs has been nearly as high. The infestation among cattle is stated to have attained 15 to 20 percent and that among horses and mules 5



to 8 percent. The percentage of infestation in many counties in Georgia and Florida is equally high. Extensive unfenced areas are pastured by sheep, cattle, and other stock in each of these States, and the losses have invariably been higher where the stock has been run on such open range.

One of the leading predisposing causes of screw-worm infestation in the Gulf States is the attack of the Gulf coast tick. This tick affects all kinds of animals, usually in the external ear, which soon becomes swollen and cracked, forming an ideal place for screw worms to attack. The exudate from the screw-worm-infested wound runs down into the ear and over the face, encouraging the flies to lay eggs upon and the worms to burrow into the more vital parts of the animal. In much of the screw-worm-infested territory, therefore, the control of the Gulf coast tick is an important step in dealing with the screw



FIGURE 56.—Peeling brands attacked by screw worms.

worm. The habits of this tick do not permit its eradication, or even satisfactory control, by dipping, as practiced in the eradication of the cattle tick. The application, with a swab, of pine-tar oil to the inner surface of the ears kills most of the worms and protects the animal from infestation for several days.

#### Infestation of Young Animals

Another important cause of attack and consequent loss is the birth of young during the season when screw worms are active. During this outbreak many stock owners found that practically every newly born lamb, calf, and pig was attacked. In these young animals the navel or mouth is usually involved, and in the former location the burrowing maggots soon reach vital parts and cause the animal to die. In the Southeastern States branding (fig. 56), castrating, and marking have been carried on heretofore at any time the stock owner's fancy

dictated, and this practice has given rise to innumerable infestations. Large numbers of freshly branded and ear-tagged cattle shipped into the infested area in accordance with the Government's drought-relief program became infested with screw worms, and this led many to believe that the pest was introduced from the West with these cattle. The fact that the insect was prevalent in the Southeastern States in 1933 and in the spring of 1934 before the drought-relief cattle were introduced clearly disproves this.

Many stock raisers in the Southeast have asserted that unless the screw worm is controlled they will be forced to abandon livestock raising. This statement has emanated chiefly from the large owners who have run their herds and flocks on open range. It seems certain that stock raising cannot be carried on profitably in the presence of screw-worm conditions such as those existing in 1934 without decided changes in methods of management.

Ranges must be fenced in order to enable the stock owner to check up closely on his stock and treat injured or screw-worm-infested animals promptly and regularly. The extreme importance of prompt treatment is emphasized by the recent discovery that there are two distinct species of screw-worm flies, one of which apparently breeds only in the tissues of living animals. Thus, if infested animals are not treated, this most destructive form may multiply until a pasture is heavily stocked with them.

The heavy infestation of newly dropped young in the summer and fall makes necessary the control of breeding time so as to avoid births during the most active fly season. This, in turn, demands fences to control the breeding stock and often the production of supplemental feeds to keep the dams in proper condition for dropping their young early in the spring.

The fencing of pastures invariably leads to the breeding of better animals, and the possession of more valuable animals demands better care of them; thus the whole industry is ultimately raised to a higher level.

The screw worm compels stockmen to brand, castrate, and mark their animals when flies are not abundant. A uniform breeding season aids in this, and fences are important.

### Control Work Undertaken

To meet the urgent needs of the acute screw-worm situation that developed in the Southeast subsequent to the making up of the budget, and to permit the Department to carry on a control campaign, arrangements were made, with the approval of the Bureau of the Budget, for the transfer of \$5,000 from an appropriation made to the Bureau of Entomology and Plant Quarantine for another purpose. This fund was used for the expenses of Department men in determining the status of the problem in the South and in directing the control work. To complete the organization and to provide some of the materials for treating infested animals, the Emergency Relief Administration in each of the States of Florida, Georgia, and Mississippi provided \$7,500. An organization consisting of regional and county control directors was quickly built up in each of these States; and, as the need of familiarizing farmers with the proper methods of treating infested animals and protecting others from attack was apparent, an intensive educational campaign was undertaken in cooperation with

the various interested Federal, State, and local agencies. Many meetings were held, in some of which demonstrations were conducted to show how to apply benzol to kill the worms and pine-tar oil to repel the flies, how to burn carcasses (fig. 57), to build treating chutes, etc. To acquaint stock owners with the proper materials for treating screw-

worm cases, small quantities of benzol and pine-tar oil were given to those having infested herds, especially those unable to buy these materials.



FIGURE 57.—Demonstrating carcass burning during screw-worm-control campaign in Mississippi.

In this work an effort was made, not only to enable the farmers to meet the present problem effectually, but to teach them how to prevent the recurrence of such heavy losses as were experienced during this outbreak, and to

improve farm practices so that livestock raising may be more profitable in the future.

F. C. BISHOPP, *Bureau of Entomology and Plant Quarantine.*

## **S**HEEP Improvement in U. S. Should Result from Recent Importations

During the last decade the Bureau of Animal Industry has made a special effort to supply the State agricultural colleges and experiment stations with rams of the highest quality to be used by them in the production of superior breeding animals. These in turn are passed on to farmers for the production of lambs and wool. Such animals have gone out from this Federal Bureau to 31 State institutions and in most cases have left a decided impression upon the sheep industry.

In order that this service may be made as useful as possible and that the quality of the animals may be the most meritorious, the Bureau recently acquired for its breeding operations at Sheep Acres, Beltsville, Md., some of the finest animals of the Shropshire, Hampshire, and Southdown breeds available from the most successful sheep-breeding establishments in England and Scotland. A consignment of merit which arrived in November 1933, consisted of 20 ewes and 4 rams especially selected at the dispersal sale of the famous Corston flock of Shropshires owned by the late T. A. Buttar of Coupar Angus, Scotland (figs. 58 and 59).

A second consignment of the most select animals available arrived at the Government farm in September 1934. In this last importation were 6 yearling ewes (fig. 60) and 2 stud rams of the Hampshire breed. One of these rams, bred by Maj. V. S. Bland of Aldbourne, England, was selected for his outstanding individuality (fig. 61). He was a show ram that was undefeated during the entire show season. The

other ram was a show ram as a lamb, bred in the famous Pendley flock of Tring, England. He was used extensively as a sire the following fall and has proved his ability to sire lambs of exceptional merit. Four of the ewes were outstanding show animals, bred by E. Clifton Brown of Burnham, England, and two were select breeding ewes from the famous Flower flock at Chilmark, England. This consignment of Hampshires gives the Bureau as good a representation of the breed as was possible to find in England. Their offspring should prove to be of superior merit and should justify their importation by the increased efficiency of their progeny in the flock.



FIGURE 58.—Shropshire stud ram, Corston no. 84, yearling ram in service in the Bureau of Animal Industry's flock, Beltsville, Md. The ram was obtained at the dispersal sale of T. A. Buttar, of Coupar Angus, Scotland, in 1933.



FIGURE 59.—Shropshire yearling and 2-year-old ewes obtained at the T. A. Buttar dispersal sale and imported to add to the Bureau's breeding flock at Beltsville, Md.

The Southdown selection consisted of the champion pen of yearling ewes at the English Royal Show, 3 other show ewes, and a show ram (fig. 62) of exceptional merit from the flock of J. Pierpont Morgan.

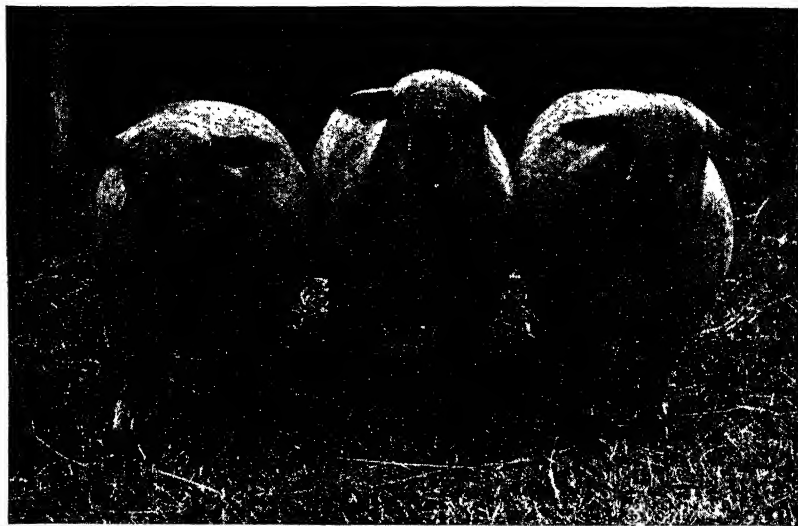


FIGURE 60.—Three of the Hampshire yearling show ewes which won first prize wherever shown in England, including the English Royal Show at Ipswich. These ewes were part of the importation in 1934 and are now a part of the breeding flock at Beltsville, Md.

In addition to these, 5 yearling breeding ewes and an exceptional stud ram selected from the famous Luton Hoo flock were obtained. This outstanding ram was champion at all the principal shows during the



FIGURE 61.—Hampshire yearling ram which won first prize at all principal English shows, including the Royal at Ipswich in 1934. Obtained for a stud ram in the Government flock at Beltsville, Md.

season, including the Royal at Ipswich. This consignment is unquestionably one of the best of the breed ever brought into the country and the superior merit of the animals should be manifest through their progeny for many years to come in Southdown flocks of the United States.

The other animals in this importation were two Shropshire rams, one a show ram

that was bred in the flock of E. Craig Tanner, Eyton-on-Severn, England, which was first in his class at the Royal, and the other a show yearling bred by Maj. J. N. Ritchie of Tern, England. These rams should combine well in blood with the Buttar stock, imported the preceding year.

Although these English-bred sheep are not considered superior in all cases to those produced in the United States, the admixture of the best available imported blood to the best strains now being produced in this country should hasten flock improvement materially. Complete performance records are being kept on these imported sheep and only those that prove superior in their production of wool and lambs will be retained for use in the Bureau's experimental flocks.



FIGURE 62.—Southdown ram, Aldenham 839. An outstanding show ram and sire. Obtained for use at Beltsville, Md.

C. G. POTTS, *Bureau of Animal Industry.*

## SIRUP Buying from Farms By Relief Agency Shows Need for Better Quality

The farm-made sirup industry involves a processing of raw material on the farm. Instead of selling sugarcane and sorgo as such, these crops are made into sirup either on the farms of the growers or at farm custom mills on a share basis. At least 60 percent of the production is marketed as an important source of cash for thousands of small farms, located principally in the South. By processing sugarcane and sorgo and marketing them in the form of sirup, the farmer has an opportunity for obtaining a considerable "step-up" in value.

Recent purchases of sorgo and sugarcane sirups by the Federal Surplus Relief Corporation direct from farmers through State extension marketing services in several producing States have resulted not only in making the relief dollar do double duty, but have also thrown an economic searchlight upon the problems of sirup producers in handling this subsistence and cash crop which is of importance on many small farms. The purchase on behalf of the Federal Emergency Relief Administration of sirup direct from farmers on a scale of hundreds of thousands of gallons has emphasized the variation in quality which is a serious obstacle to the more profitable marketing of this crop.

On first thought this difficulty confronting the farm-scale sirup producer may appear to be a simple marketing problem, but further consideration shows that the problem is more complex than one of simply establishing the usual marketing program as applied to fruits and vegetables. The establishment of a grading system and marketing program alone will not solve the problem, since too large a percentage of farm-made sirup is not merchantable because of various defects such as sugaring, sediment, turbidity, dark color, and strong flavor. It is necessary to improve production at the source in order that the percentage of off-grade sirup may be reduced to a point at which a grading and marketing program will be effective.

### Chemical and Technological Research

Basic chemical and technological research by the Bureau of Chemistry and Soils is resulting in the solution of various difficulties which have been the cause of defects in quality and which heretofore have stood in the way of a sufficient degree of uniformity in quality. Effective methods have been developed for preventing sugaring (crystallization of sucrose) in both sugarcane and sorgho sirups and for obtaining better control of color and flavor. Crystallization of sucrose (cane sugar) can be prevented by transforming a portion of the sucrose into invert sugar. This is accomplished by adding to the sugarcane juice or semisirup a very small proportion of invertase, which is an enzyme that has the specific property of inverting sucrose. In sugarcane sirup of strong flavor and dark color the flavor and color can be reduced by the use of decolorizing carbon. A method for using decolorizing carbon on a farm scale has been devised.

A practical farm-scale method of using the malt-extract method for preventing gelatinization of starch in sorgho sirup has been devised. The malt extract, which is added to either the sorgho juice or to the semisirup, transforms the starch into sugar and dextrin. This treatment not only prevents slow boiling and subsequent jellying of the sirup, but also yields a sirup which is much clearer in appearance than that ordinarily obtained. The method is simple and the cost is small. More basic research along this line is needed in order to provide a sufficient solution of the problem at the source as a prerequisite to grading and marketing.

### Coordinated Program Desirable

For the purpose of bringing about more profitable marketing of farm-made sirups in a manner comparable with the marketing of fruits and vegetables, it is necessary to have (1) correlated agronomic and basic chemical technological research for the development of improved production methods which will result in sirup of better and more uniform quality, (2) timely and rapid dissemination of research information through the extension services of the various sirup-producing States so that research results can be applied without delay, and (3) cooperation of farm marketing agencies for operation of grading and packing plants so as to effect an orderly marketing of farm-made sirups.

One State marketing agency, which purchased over 300,000 gallons of sugarcane and sorgho sirups during the past year for the Federal Surplus Relief Corporation, is now taking steps toward the installation of grading and packing plants for the purpose of placing farm-made sirup on an equal marketing basis with vegetables and other farm crops. An important influence for extension of the commercial market for farm-made sirups is the wide distribution of sirups purchased by the Federal Surplus Relief Corporation for relief purposes. These sirups have been distributed in some areas in which heretofore very little farm-made sirup has been consumed. Favorable reports regarding the reception accorded these sirups have been received and this distribution may have an important influence in widening the commercial market in later years. Sorgho and sugarcane sirups have important nutritional and dietetic properties which are valuable for supplementing other foods in the diet.

E. K. VENTRÉ, *Bureau of Chemistry and Soils.*

**SOIL-Erosion Studies** It has become a matter of common knowledge that the uncontrolled action of wind and water has done serious damage to great areas of some of the best agricultural lands of the United States. The installation of a series of erosion-control experiment stations was begun late in 1929 to study in a systematic way the character and control of the natural forces at work under a wide variety of soil and climatic conditions. So far 10 stations have been set up in various parts of the country by the Department. They have been established in cooperation with State experiment stations and other local agencies.

At some of the stations much leading information already has become available on several phases of the subject which should facilitate the task of planning a land-use program for denuded and semidenuded acres. This information is proving useful as a basis for establishing general control measures against current and future losses of soil and water.

The development of this phase of the work has been particularly timely in connection with the national program of conservation. Many influences have been brought to bear upon this subject, and more control work has been started during the past year than ever before. Programs of work have been intensively fostered in this field not only by the regular Extension Service of the Department and by the E. C. W. camps of the Civilian Conservation Corps, under the direction of the Department of Agriculture, but also by the recently created Soil Conservation Service in the Department of Agriculture. Intensive efforts are being made by the latter to develop impressive control demonstrations, based upon the data furnished by the investigational work of this Department's erosion experiment stations. This work is under way on more than 20 watersheds, most of them 100,000 to 200,000 acres in size, located in widely different sections where erosion is bad.

### Wind Erosion

The terrific dust storms that prevailed throughout the Middle West during the past year have developed public concern regarding the erosion problem. The more violent of these storms traveled eastward to the Atlantic seaboard and passed out to sea carrying thousands of tons of choice soil materials swirling in mid-air to heights of 2 or 3 miles. In many ways such disturbances are comparable to the "black storms" of Russia. Following a violent storm of this type in the Ukraine on April 25-26, 1928, 700 widely distributed measurements showed that a total of 15,400,000,000 tons of soil had been swept up into the air and deposited in other parts of the country as well as in Poland and Rumania.

This type of soil denudation, just as in the case of sheet and gully erosion by water, is the usual consequence of injudicious land use in these semiarid sections of the country. The illustrations in figure 63 show in a general way the extraordinary conditions that prevail during such storms and those that follow. Control of soil losses by wind may be promoted by the use of judiciously spaced windbreaks and protective covers of close-growing vegetation, as well as by the adoption of proper methods of cultivation, especially during critical seasons of the year.



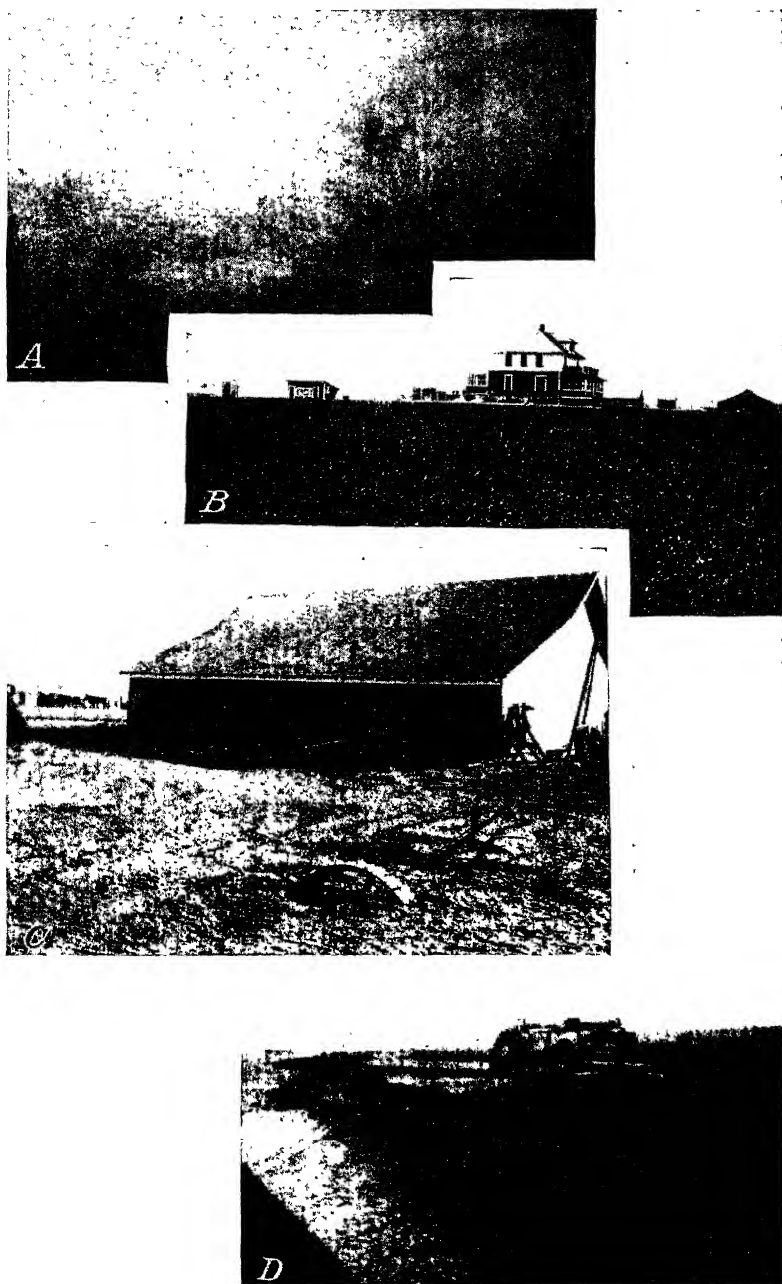


FIGURE 63.—Wind erosion in the Midwest (Dixon Valley, S. Dak.) in the spring of 1934: *A*, A modern farm house and buildings engulfed in a dust storm, the outline of the house alone being visible in the distance; *B*, after the storm, the same farm home shown in *A*, taken from the same position; *C*, machinery buried in the farm yard by soil which drifted in from the fields during the storm; *D*, road conditions following a dust storm and rain when the former drifted the highway over with fine soil to a depth ranging from 12 to 18 inches and the latter transformed it into a deep bed of soft mud.

### Investigational Work on Erosion Control

The aggregate area served by the present series of erosion stations is approximately 225,000,000 acres. Each station already has contributed constructive information for direct application in the field and for extension activities. This information has dealt with the relative rates of soil and water losses from various soils under definite conditions of slope, with climatic relations, and with surface exposure and other treatments, and has included suggestions for erosion control under working conditions.

Rather definite physical relations exist between established soil types and erosional behavior. Type relations and comparisons are being studied especially from the standpoint of infiltration rates. Important results are accumulating which are of basic value in an accurate evaluation and study of soil erosion. A definite knowledge of the sum of the basin capacity, in inches of rainfall, of the surface conformation of a soil developed by a given type of cultivation or treatment, and of the rate of infiltration of water into that soil under those conditions, is a factor of considerable importance in run-off and erosion control. The difference between this value and the total rainfall must represent the amount that will run off the surface, be lost to plant growth, and cause erosion unless the soil is protected. The effect of the incorporation of organic matter, and of such cultural practices as careful contouring or the use of the hole-digging machine on the infiltration rate, makes these cultural practices of primary importance in erosion control. They may also have a secondary effect through the direct improvement which they exercise over plant growth.

### Vegetation Plays Important Role

The dominant role of vegetation, whether it be grass, close-growing cover crops, shrub, or forest cover, as a controlling factor in soil and watery losses, has come to stand out in an exceedingly important way. Highly effective control measures involving vegetation are much in use where gully control is a major aim. The effectiveness of vegetation in protecting against gully encroachments is well shown in figures 64 and 65 taken at the Bethany (Mo.) station where a considerable amount of work along this line is in progress. The role of vegetation in holding the soil in

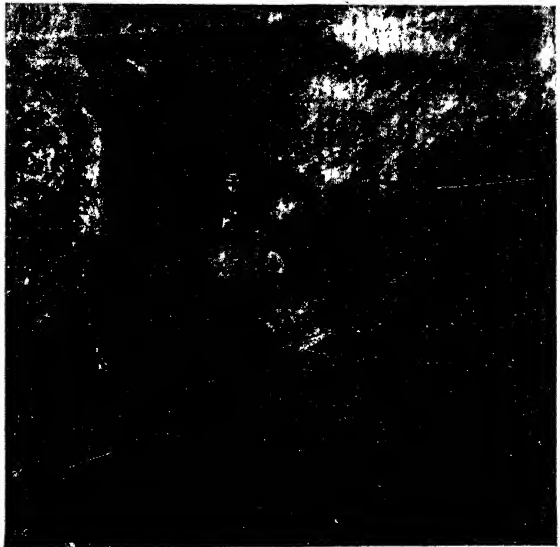


FIGURE 64.—Gully control with the use of vegetation. Gully H at the Bethany Soil Erosion Experiment Station on Shelby silt loam prior to setting up control work. This is typical of gully formation in this soil.

place is, of course, not all new information. natural force, which has been continually



FIGURE 65.—Gully control with the use of vegetation. Gully H, as shown in figure 64, taken 3 years after setting wire checks, plowing down sides, seeding, and setting trees.

Were it not for this at work throughout the ages, soils never would have developed as we now find them under virgin conditions, even on comparatively slight slopes. Its effectiveness is well shown by the simple comparisons of table 11 which represents soil and water losses from control plots on a wide variety of soils in widely different sections of the country under definite conditions of slope and surface exposure. According to the results presented as soil and water losses it is apparent that close-growing vegetation such as grass, alfalfa, etc., slows down water

losses, and decreases soil losses hundreds and even thousands of times when compared with uncontrolled plots.

TABLE 11.—Comparison of soil and water losses by surface run-off from selected treatments of the control-plot series at several of the soil-erosion experiment stations which show the striking degree of control that is possible through the proper use of vegetation

| Area, soil type, and rainfall (inches)  | Plot treatment <sup>1</sup>           | Soil loss per acre | Loss of rainfall |
|---|---------------------------------------|--------------------|------------------|
|   |                                       | Tons               | Percent          |
| Upper Mississippi Valley, La Crosse, Wis., Clinton silt loam, 16 percent slope (1933 only). 29.11.  | Bare soil, uncultivated.....          | 51.5               | 15.9             |
|   | Continuous corn.....                  | 59.9               | 19.2             |
|   | Continuous barley.....                | 12.0               | 17.8             |
|   | Continuous bluegrass.....             | .003               | 2.9              |
| Missouri-Iowa, Bethany, Mo., Shelby silt loam, slope 8 percent (average 3 years, 1931-33). Average annual rainfall, 33.53.  | Bare soil, uncultivated.....          | 112.48             | 25.98            |
|   | Continuous corn.....                  | 61.16              | 27.38            |
|   | Continuous bluegrass and timothy..... | .36                | 7.72             |
|   | Continuous alfalfa.....               | .22                | 3.40             |
| Red Plains, Guthrie, Okla., Vernon fine sandy loam, slope 7.7 percent (average 4 years, 1930-33). Average annual rainfall, 32.92.                                 | Bare soil, uncultivated.....          | 14.59              | 26.04            |
|   | Continuous cotton.....                | 28.05              | 14.18            |
|   | Bermuda grass.....                    | .040               | 1.51             |
| Texas-Arkansas-Louisiana, sandy lands region, Tyler, Tex., Kirvin fine sandy loam, slope 8.75 percent (average 3 years, 1931-33). Average annual rainfall, 42.31. | Bare soil, uncultivated.....          | 12.20              | 18.20            |
|   | Continuous cotton.....                | 19.06              | 18.00            |
|   | Bermuda grass.....                    | .20                | 1.50             |
| Central piedmont, Statesville, N. C., Cecil sandy clay loam, slope 10 percent (average 3 years, 1931-33). Average annual rainfall, 42.9.                          | Bare soil, uncultivated.....          | 65.3               | 32.0             |
|   | Continuous cotton.....                | 14.0               | 9.7              |
|   | Continuous grass.....                 | .8                 | 5.2              |

<sup>1</sup> All plots 72.6 feet long and 6 feet wide, or one one-hundredth of an acre in size.

### The Importance of Proper Crop Rotations

One of the most important fields for study in the relation of plants or plant covers to erosion control, especially where cultivated crops are necessarily involved, is to be found in the adjustment of crop rotations for best results. Thus cotton planted continuously on a Vernon fine sandy loam is much more conducive to erosion and water losses than when used in a rotation of cotton, wheat, and sweetclover. Under the former condition it developed an average annual soil loss of 28.0 tons per acre, and an average annual water loss of 14.2 percent of the rainfall over a 4-year period, against a loss of 16.4 tons of soil and 11.7 percent of the rainfall where the crop appeared in the rotation referred to but under otherwise identical conditions. When the average for the entire rotation is considered the loss of soil is reduced to 6.3 tons per acre and that of rainfall to 11.7 percent. The unusual effect of the association of the other crops with cotton under the conditions of the rotation referred to in reducing these losses is readily apparent. The same relation has been found to hold for corn and other cultivated crops in this and other areas.

### Strip Cropping

Under natural conditions of cultivation, strip cropping, or the alternation of close-growing crops such as alfalfa or sorghum with culti-



FIGURE 66.—Strip cropping on Shelby silt loam (slope 4 to 5 percent), field L at the Bethany Soil Erosion Experiment Station, looking south across one of the sodded draws or natural drainageways. The strips are each 115 feet wide and are used for a 3-year rotation of corn, oats, and clover laid out on a modified contour with permanent meadow below and an irregular area of alfalfa above.

vated crops such as corn or cotton, in strips of definite width, depending on the degree of slope and other factors, shows highly interesting possibilities for erosion control. The procedure of course falls within the limitations of availability of desirable crops for a given soil, locality and type of farming as well as the seasonal exposure involved during the periods of seeding. The degree and uniformity of slope as well as

the systematic protection of all depressions or natural waterways are also important factors requiring careful attention. Where the practice is to be adapted to an impervious soil, the strips should be placed somewhat off the contour or slightly graded down the slope toward the protected drainageways, in order to develop surface flow in that direction rather than down the slope.

On the impervious Shelby silt loam at the Bethany station in Missouri, strip cropping on the modified contour, with well-protected drainageways, is proving a very practical and efficient method of reducing erosion on slopes of moderate grade where severe gullying has not produced a rough topography. The arrangement of these strips in relation to the protected drainageways for a rotation involving corn,



FIGURE 67.—Strip cropping on Shelby silt loam (slope 4 to 5 percent) as shown in figure 66, but looking up the sodded draw or drainageway that functions not only in carrying water down the slope from above the established strips, but also from the strips themselves as it is delivered from them to such a natural channel-way as a result of the slight grade down the slope on which they are laid out.

oats, and clover at the Bethany station is well shown in figures 66 and 67. Generally similar results have been obtained at the Temple and Tyler (Tex.), Clarinda (Iowa), and Guthrie (Okla.) stations.

### Terracing and Other Contour Operations

The principal weakness in any attempt to use vegetation alone as a complete control for erosion, especially on steeper slopes, lies in the fact that under practically all farm conditions where erosion is a serious factor, such areas must be used for cultivated crops at some point in the rotation. The supporting effect of terraces thus becomes important. While terracing is not regarded as a complete control for sheet washing under conditions of exposed, cultivated surfaces on slopes conducive to the erosion of a given soil, the use of broad contoured channelways of this type across the face of erosive, sloping fields tends very effectively to reduce sheet erosion and to prevent the development of the more severe type of gullying.

### Combination Methods Necessary

Just as control of soil and water losses by vegetation requires the assistance of terracing or other forms of contour operations under certain conditions of soil, crop, and slope, so terracing requires the assistance of the plant as completely as this protection can be afforded. Erosion control increases with the extent that vegetation is used. This is due to the fact that cultivated slopes, even on terraced areas, are exposed to some sheet erosion. This protection is afforded by the use of more cover crops and the more frequent use of thick-growing crops in the crop rotations and by effecting certain combinations of strip cropping in which the strips are definitely arranged in relation to the terrace positions. Studies are under way at some of the stations involving the combination of strip cropping with a lower type of terrace than is ordinarily constructed especially under moderate conditions of rainfall. Combinations of mechanical means with vegetation used in a proper manner have interesting possibilities.

R. V. ALLISON, *Bureau of Chemistry and Soils.*

### SOIL Survey Provides Data for Classifying Land; Planning Uses

Various local and State governments, faced with problems of tax delinquency resulting from the inability of farmers to earn an income from soils that are too unproductive or remote from markets, are demanding some program for land use which will enable the citizens of the distressed communities and counties to support their schools and roads.

In one form or another such programs are at present under way in New York, Wisconsin, North Dakota, Michigan, and Washington. The various measures put into effect by these governments for planning land use and for the conservation of resources immediately call for an accurate inventory of the relative productive values of the different soils of areas concerned. Obviously a classification of the land is the first essential step in attempting to meet this problem. The growth of plants, whether for crops, grazing, or forestry, is so intimately bound up with the nature of the soil type that the physical quality of the land ultimately determines, more than any other factor, the possibility for success of any agricultural enterprise. In the case of the cropping-use group especially, the units of operation—farms and ranches—are small and individual. Physical information about the land must be sufficiently detailed in its geographic expression on maps to indicate clearly the nature of the land on each unit. As a further requirement it was necessary to have an approximate idea of the total extent of the various soil types, capable of use for the various types of enterprise.

Fortunately about half the nonmountainous part of the United States had been covered by the soil survey and the data were available for the necessary land classification. A part is covered by reconnaissance soil surveys made on a scale of about 2 to 6 miles to the inch and showing the general distribution of the principal soil types. The greater portion is covered by detailed surveys on a scale of 1 mile to the inch and showing accurately the distribution of the soil types and other physical features of the land in close detail. Detailed reconnaissance surveys cover projects having nonmountainous areas requiring

detailed work and mountainous areas in which only general features need be shown.

The soil map is accompanied by a report describing the various soil types and explaining their use. The general conditions of climate, vegetation, physiography, geology, and drainage are described as well as the detailed condition for each type. Agricultural practices are discussed, giving statistics as to crops grown, yields obtained, market facilities, and similar material having a bearing upon the use of the land.

### Land Inventory Compiled

Each soil type has quite definite, determinable possibilities for the growth of crops, grasses, or forests. Through the long accumulation of data and experience by research workers and farmers on soil types, much definite information is now available. The Division of Soil Survey has prepared definite ratings of natural productivity for each soil type for the various crops grown in the majority of the areas. These ratings were made in cooperation with the State experiment stations and represent the result of accumulated experience on each soil type. These data have been compiled for the United States as a whole and may be summarized in 5 classes from 1, the best, to 5, the poorest, according to natural productivity as shown in table 12.

TABLE 12.—*Area of the United States covered by the soil survey and percentage of the land surveyed that falls in each class*

| Class  | Area surveyed | Percent-age | Class      | Area surveyed | Percent-age |
|--------|---------------|-------------|------------|---------------|-------------|
|        | <i>Acres</i>  |             |            | <i>Acres</i>  |             |
| 1..... | 100,752,633   | 5           | 5.....     | 881,931,310   | 47          |
| 2..... | 210,707,665   | 11          |            |               |             |
| 3..... | 346,172,420   | 18          | Total..... | 1,901,589,667 | 100         |
| 4..... | 362,025,639   | 19          |            |               |             |

### Method of Land Classification for Tax Assessment

The Division of Soil Survey has completed a cooperative project with the North Dakota Agricultural Experiment Station for a detailed land classification in McKenzie County, N. Dak. Billings County of the same State will be completed early in 1935, and Morton County somewhat later. Other counties are being taken up as rapidly as possible.

This work was organized at the request of the local officials in the counties for the special purpose of making assessments for taxes on land according to its producing capacity. Although such a classification of lands on a uniform basis for appraisal rests primarily on the nature of the soil, other factors necessarily are considered. The degree of slope and of stoniness are carefully noted, as well as the nature of the grass cover, forest growth in the stream valleys, presence of alkali, accessibility to markets, and similar factors which influence the production of farms and ranches.

The procedure developed for this work consists of four principal steps:

(1) The soils and other physical features of the land are mapped in detail on a scale of 2 inches equals 1 mile, in classes defined according to their practical significance.

(2) The natural productivity of each important combination of soil, slope, and stoniness, is determined by studies of the actual use of these lands, both for grazing and for crop production. Thus each land type is given a numerical rating in terms of its percentage of the ideal, or best-producing land of the county, both as cropping land and as grazing land.

(3) The use group (cropping or grazing) of each tract of land is determined largely on the basis of the amount of the various land types and on accessibility. Land naturally adapted to crops is rated as cropping land unless the area is too small or too far distant from other cropping land for economic farming. In this area, land unsuited for cropping is rated according to its productive capacity.

(4) According to the relative amounts and productive capacity of each of the land types and the social unit of land (farm, ranch, or other holding) each tract of land is given a composite rating in terms of ideal land, as 100 percent. These values are reduced conformably to a uniform schedule according to their accessibility to markets, as determined by the distance and the type of road. Those grazing lands lacking natural sources of water take a further reduction. As the lands in North Dakota were surveyed and sectionalized by the Government Land Office, the land is listed on the tax roll by forties according to the survey. The results of the land classification are also given on the basis of the 40-acre unit. Thus each forty is given a rating between 0 and 100 percent according to its productive capacity, in an economic sense in relation to the best, or ideal land of the county.

With such a classification in hand, it only remains for the local officials to determine the assessed valuation of ideal land, and all other land takes its appraisal according to its productive capacity. County officials have encouraged the development of this procedure with the thought of obtaining a more equitable and practical distribution of local taxes on farm land. At the same time the data obtained in the course of the classification are those required for any planning of land use. These same appraisal values are being used in the acquisition of lands for grazing districts and public parks.

### Land Surveys in Tennessee

In order to furnish a basis for planning agricultural development in the Tennessee Valley, the Division of Soil Survey is cooperating with the Tennessee Agricultural Experiment Station and the Tennessee Valley Authority in making soil surveys for that area. Detailed mapping of the soil types and other physical features of the land is followed by a crop survey in order to establish the yields, crops, and kinds of management most characteristic of each of the widely different soil types.

A somewhat similar type of survey is being conducted in cooperation with the Washington Agricultural Experiment Station at the request of the local residents, in order that a more practical use of lands may be developed and the local expenditures, especially for schools and roads, brought into harmony with the potential producing power of the area.

CHARLES E. KELLOGG, *Bureau of Chemistry and Soils.*



**S**TARCH-Making from Cull Sweetpotatoes is Placed on Commercial Basis The process devised by the Bureau of Chemistry and Soils<sup>2</sup> for production of starch of high quality from cull sweetpotatoes is now being placed on a commercial basis and it is anticipated that a new starch industry will be developed in this country as a result. The Federal Emergency Relief Administration is financing a sweetpotato-starch factory at Laurel, Miss., to provide employment. This factory will be operated in the interest of a cooperative association of sweetpotato growers and, after setting aside necessary reserves, profits will be distributed to growers on a pro-rata basis. Selection and installation of equipment, as well as initial operation of the factory, are under the technical supervision of the Bureau of Chemistry and Soils. The capacity of this factory is about 2,000,000 pounds of starch annually.

Sweetpotato starch has been tested in several cotton mills and found to be satisfactory for the sizing of warp yarn and for finishing. It gives fully as good results as imported potato starch and also has an advantage in economy in quantity required. All but a small proportion of the potato starch imported into the United States is used in cotton mills.

Dextrine prepared from sweetpotato starch has been tested by the Bureau of Engraving and Printing, and on the basis of both laboratory and machine tests, has been found to be equal to the dextrine made from imported cassava starch which is now used as an adhesive for stamps and for similar purposes. Sweetpotato-starch dextrine is the first domestic product which has met the requirements of the Bureau of Engraving and Printing for this purpose. Under the law requiring the Government to purchase products of domestic origin whenever feasible, it is anticipated that a market will be afforded sweetpotato-starch dextrine for use on postage stamps, envelopes, etc., produced or used by the Government.

As a byproduct of starch production there is obtained a residual pulp which after drying can be sold at a profit to feed mixers. The dried pulp can be mixed advantageously with cottonseed meal so as to produce a better balanced ration for cattle feed. Experiments are being made on the possibility of also adding to this feed ground, dried sweetpotato vines which by analysis are not greatly inferior to alfalfa in feeding value.

### Transportation Costs

Low transportation costs are an important factor in the success of any industry. The prospective sweetpotato-starch industry will, in general, have minimum transportation costs. Sweetpotatoes are available in large quantities in areas contiguous to southern cotton mills which are expected to use a substantial proportion of the starch. Cottonseed meal is produced in the same areas and the feed will be utilized locally, sales being effected through local feed mixers.

This industry is being developed primarily to afford a market for cull sweetpotatoes, which constitute a large proportion of the field-run crop and which are now largely unremunerative. However, under some conditions it may be both profitable and economically advisable to use field-run sweetpotatoes for starch production. This new industry may contribute to a solution of the problem of utilization of cut-over pineland in the South, particularly in the coastal plains

<sup>2</sup> See Yearbook of Agriculture, 1932, p. 522; 1933, p. 362.

section, which is especially suitable for growing sweetpotatoes. Sweetpotatoes are particularly adapted to newly cleared lands such as cut-over pinelands in the South (U. S. Department of Agriculture Farmers' Bull. 999, Sweetpotato Growing, p. 2). It has been suggested that a feasible means of handling this cut-over land problem is partial reforestation (utilizing turpentine and rosin to cover carrying charges until the trees reach lumber size) together with the growing of sweetpotatoes and other suitable crops. This new industry is expected to provide a market for considerable quantities of sweetpotatoes.

H. S. PAINE, *Bureau of Chemistry and Soils.*

**STREAM-IMPROVEMENT Work** Possibly no work done in  
**in the National Forests** the national forests by the  
**to Develop Better Fishing** Civilian Conservation Corps  
 and other relief agencies  
 presents such great opportunities for immediate returns or has proved  
 of so much interest to the general public as the work of stream im-

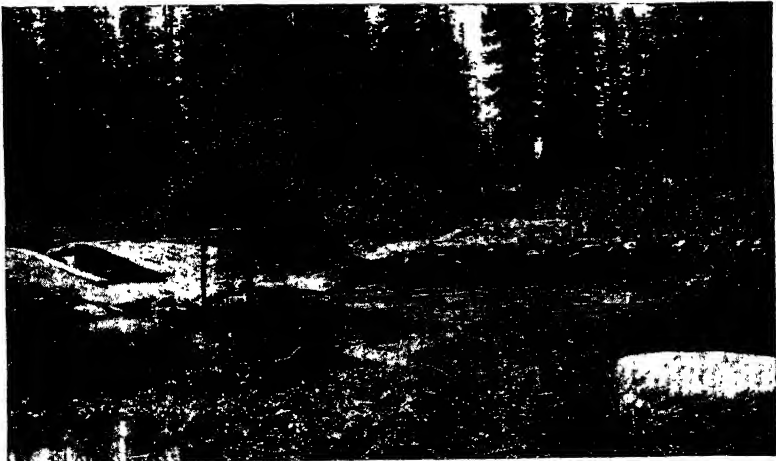


FIGURE 68.—Rearing ponds of various types have been constructed.

provement to develop better fishing. In the Medicine Bow National Forest of Wyoming, as well as in the many other national forests in Wyoming and Colorado where stream-improvement work has been done, it has usually been of two classes. Rearing ponds have been constructed into which fry can be placed for a year or two before being liberated in the trout streams, and improvements made in the streams to better conditions under which trout may grow and develop (fig. 68).

Conditions in mountain areas are at best severe and small fry have a slim chance of survival against their many natural enemies, including larger trout, and because of the change from hatchery to field conditions, such as swift running water, small supplies of natural food, and handling between hatchery and stream or lake. To develop fry to fish of sufficient size to withstand most of these dangers, is the

purpose of rearing ponds. These ponds have been built in localities of high altitudes where mountain lakes of glacial origin are to be kept stocked with trout and where fry are retained for but a single season, as well as at lower elevations where the fry may be left for 2 years, when they will be of sufficient size to care for themselves with little or no loss. Loss in planting fry directly into streams or lakes has been reported as high as 95 percent, while loss in small fish transplanted from rearing ponds to streams or lakes is usually almost negligible.

### Types of Rearing Ponds

Various types of rearing ponds have been constructed, including earth dams with metal or wood standpipes for draining the pond, earth dams with concrete cores, and timber dams underlaid with loose rock. Some very cheap and serviceable ones have been constructed by making use of beaver dams and installing standpipes and drainage boxes at costs of but \$50 to \$75. The general plan is to put fry into



FIGURE 69.—Stream improvements provide deep, quiet water and opportunity for plant life to develop, which in turn induces insect life.

the pond in the spring and drain the pond either during the following fall or the second fall, and transport the small fish to streams and lakes by truck or pack horse.

Improvements placed in the rapidly flowing, rock-strewn mountain streams present an opportunity to greatly increase the production of trout. The mountain streams of the West are limited in acre production of fish both by lack of food and depth of water. Improvements now being made include the construction of simple log and rock dams to form stream pools. These provide deep, quiet water and opportunity for plant life to develop, which in turn induces insect life (fig. 69). Deflectors or jetties which force the current to scour the upper portions of pools are also being built as well as brush or log covers close to the shore under which trout may avoid the direct sunlight and take refuge from kingfishers or other enemies.

So far the work is largely experimental, but it is already showing surprisingly favorable results and it is felt that in a year or two these

efforts will greatly increase the fishing opportunities in a region now subject to steadily increasing use.

HUBER C. HILTON, *Forest Service.*

**SUGARCANE Crossed With Sorgo Gives Seedlings Potentially Valuable** With due regard for inadequate conception of what constitutes a species and often also a genus in the plant world, it may safely be said that interspecific crosses are not common and intergeneric crosses are exceedingly rare. Well-authenticated examples of intergeneric hybrids in the crop plants are corn-teosinte and wheat-rye, but the majority of cases reported do not stand close scrutiny. It is of special interest, therefore, to record progress in crossing sugarcane (*Saccharum officinarum* L.) with closely related genera in the tribe Andropogoneae or bearded grasses.

As early as 1848 Leonard Wray, a progressive planter operating in Jamaica and later in India, published an account of experiments performed some years previously in which he attempted to cross sugarcane with sorghum (bajra) and Indian corn (boota). Mr. Wray's purpose was not to improve the cane but to find out if by this means sugarcane could be made to produce viable seed. His technic, part of which he owns may have been based on ideas perhaps fanciful, consisted of carefully removing the "eyes" or buds of each node on the prospective parents as they developed side by side, then bringing the "arrows" or flowering stalks into contact and shaking them smartly from time to time. His hope that he might get the flowers of the sorghums and corn "to impregnate and fructify those of the cane" was not realized, and he concluded that sugarcane will not "perfect its seed", a generalization that was disproved only after nearly a half century had elapsed. As a strange coincidence it was in connection with work leading to the discovery that sugarcane can produce viable seed that the next recorded attempts to cross *Saccharum* with other genera were made. In 1886 Soltwedel tried to cross sugarcane with *Erianthus arundinaceum* (Retz.) Jesw. reciprocally, but only the panicles of the wild form, *Erianthus*, produced viable seeds, and these may have been self-fertilized. Twenty years later Wilbrink obtained 30 seedlings from the cross *S. officinarum* × *E. elegans* (Jesw.) Ruemke, and subsequently Jeswiet repeated this cross but without success. Ruemke in 1927 and 1928 crossed sugarcane, EK-28, with *E. sara* (Roxb.) Ruemke and obtained several hundred hybrid seedlings, the somatic chromosomes of which are less than the sum of the haploid number of the parents. The reciprocal cross, *Erianthus* × sugarcane, was a failure, the plants thus obtained being due to self-pollination. Barke in Queensland in 1932 obtained 24 seedlings by crossing *S. officinarum* and *S. spontaneum* with "a species of *Erianthus*", no details being given to indicate whether the seedlings were actually hybrids.

Interest has been stimulated in the intergeneric crosses with sugarcane by the undoubted success of Venkatraman in producing hybrids in 1929 by fertilizing sugarcane flowers, variety P. O. J. 2725, with pollen of a grain sorghum, *Sorghum durra* Stapf. Individuals of the resultant progenies are characterized by wide variation in habit, vigor, and other characters, but morphological studies supported by

cytological evidence, together with the fact that the female parent is regarded as self-sterile, leave no room for doubting that the thousands of seedlings thus produced are intergeneric hybrids. The same investigator has also succeeded in backcrossing the hybrids, using as father the same variety of sorghum.

### Object of the Experiments

The pursuit of knowledge and the hope that such researches may eventually lead to production of crop plants of economic importance

is the double stimulus which prompts the attempts to secure and study these hybrids. The expenditure of effort and money in crossing the large, thick-stemmed, tropical sugarcane with the slender, unprepossessing wild cane *Saccharum spontaneum* has already paid enormous dividends. In the hands of expert plant breeders interspecific hybrids of this parentage, endowed with resistance to devastating diseases and superior in yield to the larger parent, have been obtained. As yet the commercial value of the intergeneric hybrids is little known, but certain considerations, which bring out the logic behind these efforts, will make clear that hybridization with genera that are remote from *S. officinarum* is fully justified. Earlier maturity of sugarcane in countries where there is danger of frost damage is greatly desired. The advantage would be mainly to lengthen the period of harvest and grinding at the mill, and keeping the mill in operation longer by starting the campaign at an earlier date would obviously reduce the cost of fabricating sugar. Sorghum, while deficient in cane sugar, matures in little more than half the time required by sugarcane. Compared with 9 or 10 months as a minimum for cane, a few of the sugarcane-sorghum hybrids made by Venkatraman are said to mature in 5 or 6 months and yield satisfactory juices high in sugar. They have been disappointingly low in tonnage per acre, however, and improvement in this respect is being sought.



FIGURE 70.—Hybrid of sugarcane X sorgho in flower. In 16 years' experience the true sugarcane has not been known to flower in the greenhouses at Washington (latitude 38°55' N.), but this hybrid produced inflorescences there the first year. The flowers were infertile.

Looking toward plants of earlier maturity for Louisiana, Florida, and other Gulf States, the Bureau of Plant Industry succeeded in

crossing the sugarcane variety P. O. J. 2725 with the grain sorghum Red Durra, and the sugarcane variety I-1081 with Honey, a variety of sorgo, or sweet sorghum, in the fall of 1933. Of the 100 seedlings some have many of the characteristics of sugarcane, but show their sorgo parentage in the long and deep bud grooves, exposed roots of the "flying-buttress" type just above the ground surface, undulating leaf margins, and other gross characters, as well as in the chromosome number, intermediate between those of the parents (fig. 70).

Using the method of emasculating sorghum flowers with hot water, devised by J. C. Stevens and J. R. Quinby, of the Bureau of Plant Industry, the reciprocal cross, sorghum by a pollen-fertile variety of sugarcane, was attempted, but no viable seed was obtained.

The crossing was done at the United States Sugar Plant Field Station, Canal Point, Fla., and is being continued both in Florida and at the United States Sugar Plant Field Laboratory near Guayama, Puerto Rico. The difficulties involved in obtaining plants that meet all requirements are very great, and doubtless years of painstaking effort will be needed before any answer can be had as to the practical possibilities of this method of breeding. No plants are available in excess of the needs of the Bureau.

E. W. BRANDES, *Bureau of Plant Industry.*

**TILLAGE Machinery** The development of farm machinery  
**Laboratory Expected to** and tillage methods in the past has  
**Yield Valuable Data** been largely through empirical meth-  
 ods. The basic relationship between  
 soil types, machine design and operation, and crop production was not known. The difficulties encountered in handling soils in many areas, such as the Black Belt of Alabama and Mississippi, where the topography is well adapted for cultivation with standard-sized machines, resulted in the abandonment of portions of these areas in favor of the eroded and impoverished hill areas, where soils are more easily tilled. There are few plows which will work satisfactorily in waxy, heavy clay soils, which will shed and scour in "push" soils, or will withstand the abrasion of gravelly soils.

In all studies thus far made of tillage machinery under field conditions there have been variables which could not be controlled by the investigators. For instance, it has been impossible to control the soil moisture or to duplicate exactly any set of conditions. The accuracy of field work has also been handicapped by reason of the fact that the testing equipment used had to be supported by the soil under test, resulting in uncontrollable errors. These handicaps to the proper scientific study of the manifold problems connected with tillage have long been recognized. It was realized that the answer to many tillage-machinery problems could not be found unless the studies were made where soil conditions were within the control of the investigator.

To meet this long-felt need a farm-tillage machinery laboratory has been constructed at Auburn, Ala., with funds furnished by the Public Works Administration. The plant consists of 9 soil bins each 250 feet long, 20 feet wide, and 2 feet deep, 2 of the bins being divided in the center. The bins are separated by concrete walls on which are placed rails which support the testing equipment. The testing equipment includes a power car propelled by a 130-horsepower engine, which will make possible the operation of tillage machinery at speeds

of from 0.2 to 10 miles per hour. Supplementary equipment is available for other testing and for fitting the soil.

The soil bins will be filled with 11 distinct types of surface soils of major agricultural importance and which represent progressive steps in variation of the constants of soil classification. These range from sand to tight clay, both new and highly weathered soils. Consequently the results of the tests will have wide application and by proper interpretation will make basic information available to every section of the United States.

The equipment for the laboratory will make it possible to vary the soil conditions in any way desired by the investigators. The soil can be supplied with artificial rainfall or protected from the natural rainfall as desired, thus varying the soil moisture or maintaining a uniform moisture to meet the requirements of the tests.

### Plows to be Studied First

The work will be conducted cooperatively with the Alabama Agricultural Experiment Station. The first investigation to be undertaken will deal with plows. The tests will be designed to determine accurately the effects of speed, depth of plowing, width of cut, soil type, soil-moisture condition, and soil compaction upon the draft, and the action upon the furrow slice in throw, inversion, pulverization, and coverage, of a plow bottom. Several types of plow bottoms will be used to determine the effects of shape or type and size of bottom upon the above factors. The data thus obtained will be supplemented by other investigations on the action of plow bottoms due to their shape, by studies of the essential characteristics of various metals used for plow bottoms, and by studies of a measure of tilth based on its relationship to plant growth. The combined results of these studies will provide a basis for the design and development of plows which will operate efficiently and satisfactorily under the conditions for which they are intended.

Similar information will be obtained relating to other tillage machinery, and the results will be available for use in the design of improved equipment for cultivation and for the economical control of weeds. Facilities will likewise be available for studies of the rolling resistance of wheels and traction of tractor wheels, covering the complete range of soil conditions that may be encountered. The results obtained should provide a basis for determining the width of tread and size of wheels which will have the lowest rolling resistance for given conditions and for developing traction equipment which will give a tractor maximum efficiency.

The ultimate purpose of the farm-tillage machinery laboratory is to obtain basic data for use in the development of equipment that will meet the requirements for which it was designed. It is expected that implement manufacturers will take advantage of the facilities which the laboratory will afford to cooperate in investigations of fundamental machinery problems.

It has been estimated recently that 2½ billion horsepower-hours are used annually in plowing and listing alone, and the greater part of all farm power is expended in some form of tillage. If 10 cents be taken as the cost of 1 horsepower-hour the annual plowing and listing bill of the American farmers becomes \$250,000,000. Isolated field tests have demonstrated that with proper equipment and meth-

ods very considerable savings can be effected in the cost of power. Furthermore, crop field experiments show that better tillage methods increase crop yields. The farm-tillage machinery laboratory therefore offers opportunities to develop equipment which will reduce the cost of power on the farm and at the same time increase the yield per acre.

J. W. RANDOLPH and I. F. REED,  
*Bureau of Agricultural Engineering.*

**T**OBACCO of High Quality Produced Following a Natural Weed Fallow Early settlers soon observed that virgin lands produced good yields of tobacco and a leaf having a finer texture and lighter body than that grown on the older cultivated areas. It was chiefly this fact that led the early growers of tobacco constantly to clear new lands every few years until most of the land suitable for tobacco in the tobacco-producing areas had been brought into cultivation. It then became necessary for the grower to attempt to find other methods to produce a suitable product. Systematic crop rotation and the use of commercial fertilizers were tried as a means of securing a product of the desired yield and quality. These practices have not proved satisfactory on all soils and with all crop combinations.

It has recently been demonstrated that tobacco fertilized intelligently and grown after a natural weed fallow of sufficient duration possesses in a large measure those characteristics which are found in the crop grown on virgin land. The term "natural weed fallow" is here applied to areas which are not cropped for 1 or more years and are allowed to develop a spontaneous weed cover. When bare fallow was substituted for the weeds there was a rapid decline in the yield and quality of the tobacco after the first 2 or 3 years, as shown in figure 71. This fact illustrates that the weeds are the keystone of the system.

While this system may not always be applicable where there are complicating diseases such as bacterial wilt and nematodes for which the prevailing weed growth furnishes host plants, it will be suitable over other large areas. There are also economic relations to be considered, such as the fact that there are some districts in which good tobacco soils are scarce and high priced; but the system can be used to advantage where the necessary land is available and where it is desired to produce leaf of the characteristics previously mentioned. It must be remembered also that for some purposes of manufacture a thin, light-bodied leaf is not desired.

The general effect of the weed fallow is to promote a quick start and a rapid and uniform growth of the tobacco plants till maturity. The beneficial action of the natural weed fallow on the tobacco is reflected in a uniformly high market value per pound and value per acre for the crop. This in turn demonstrates that the product meets the current demands for manufacturing purposes, especially the production of cigarettes and pipe tobaccos. Intelligent fertilization of the crop and more extensive culture following natural weed fallow of sufficient duration should aid in solving the problem of keeping the



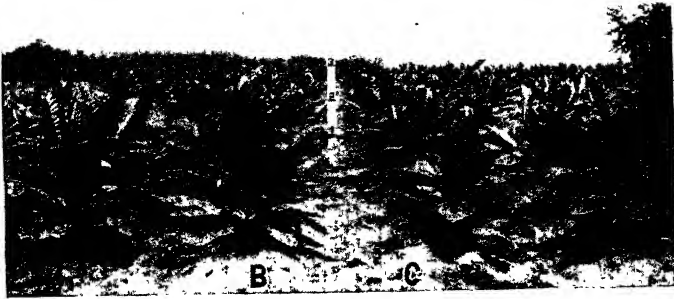


FIGURE 71.—A, Continuous tobacco, no cover crop, showing irregular and stunted growth; B, tobacco after 2-year bare fallow; C, tobacco after 1-year bare fallow; D, tobacco after 1-year weed fallow; E, tobacco after 2-year weed fallow.

total production of tobacco within proper bounds and reducing the proportion of low-grade leaf in the crop.

JAMES E. McMURTREY, *Bureau of Plant Industry.*

**TRANSIT-REFRIGERATION** Fruit- and vegetable-producing areas in the far western States are peculiarly dependent upon specialized efficient and economical means of transportation to get their crops to the consumer in an attractive and marketable condition.

California ships annually upwards of 70,000 carloads of oranges, 15,000 of lemons, 2,500 of asparagus, 29,000 of cantaloups and other melons, 6,000 of carrots, 6,000 of cauliflower, 8,000 of celery, 50,000 of grapes, 35,000 of lettuce, 10,000 of peaches, 10,000 of pears, and 3,000 carloads of tomatoes, besides substantial quantities of practically every other fruit and vegetable found on the markets of this country. Roughly, 50 percent of the commercial apples of the country, or about 40,000 carloads, are produced in the Pacific Northwest, chiefly in the Yakima and Wenatchee districts of Washington, while the same area likewise ships about 8,000 carloads of pears and substantial quantities of berries, cherries, onions, potatoes, and other fruits and vegetables.

The development of fruit and vegetable production in these areas, and the prosperity and welfare of all the people engaged therein as well as of the communities supported by these industries, are based entirely upon the successful transportation of the produce to market. Furthermore, the constant and varied supply of fresh fruits and vegetables on the market has changed the dietary habits of the Nation. No longer are fruits and vegetables to be had only seasonally. Most of them are available from some producing area every month in the year, always in fresh, attractive condition, and usually at prices within reach of the average consumer.

In the development of this vast industry and the tremendous business which it supports, refrigerated transportation has played a vital part. The successful application of transit refrigeration to the different products has been brought about in large measure through investigations of the Bureau of Plant Industry concerned with determining the proper stage of maturity at which to harvest and methods of handling, packing, precooling, storage, and transportation.

In earlier years when prices were relatively higher and returns were good, emphasis was naturally placed upon the use of methods that would reduce to the minimum every hazard of spoilage and every condition that would adversely affect the appearance of the product, and would thus deliver only the highest quality goods to the market. The successful shipment of oranges from California was effected primarily by showing the industry how to control blue-mold decay by the use of careful handling methods and satisfactory transit refrigeration. The latter involved improvements in refrigerator-car design and construction and facilities for keeping the cars fully iced throughout the transcontinental trip. Later, methods of precooling were developed to reduce the temperature of the fruit quickly and

thus still further to remove the hazard of decay, since blue mold does not make much growth at temperatures below 45° F. It is much more important to reduce the temperature of the fruit quickly and have it cold at the start of the journey than to deliver it at a relatively low temperature at the market.

### Modifying Transit-Refrigeration Methods

Based on results of these earlier studies, some of the most recent investigations of the Bureau have been directed to the possibility of

modifying transit-refrigeration methods. It has been found that instead of reicing orange shipments once every 24 hours, as was formerly the practice, only one reicing in transit is necessary, if the fruit is cold at the start. With this fact demonstrated, and the development of many details of procedure to cool the fruit without excessive cost, a reduction in the refrigeration rate was secured from the railroads which saves the industry \$30 to \$40 a car, or upwards of a million dollars annually. This saving may well mean the difference between profit and loss in fruit growing.

In all the recent investigations of the Bureau on transportation methods the primary objective has been similarly to develop every possible economy, and to reduce costs, while still delivering the produce to market in satisfactory condition. The most recent modification of shipping methods for California oranges, put into effect in August 1934, affords a saving of \$15 a car in the charge for precooling when no ice is used in transit. It was found that during the fall and spring

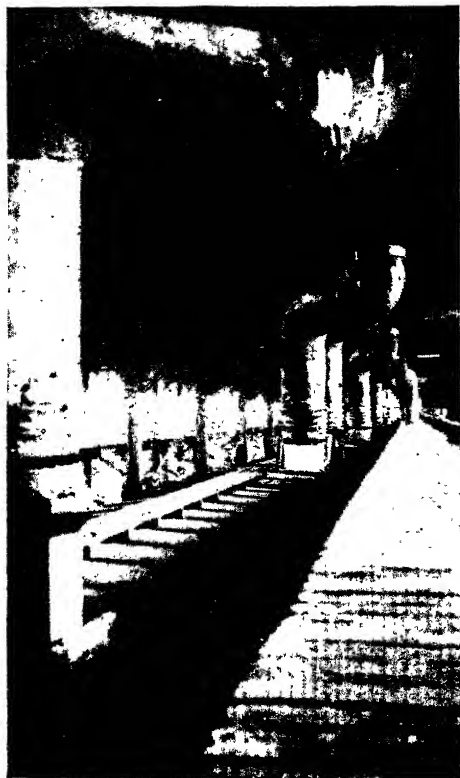


FIGURE 72.—A railroad-car precooling plant showing method of connecting cold-air ducts to ice-bunker openings. Cold air is blown in at one end of the car and is returned to the refrigerating coils from the other end. The air is reversed periodically to provide uniform cooling. It requires about 8 hours to precool a carload of oranges, and at plants such as the one illustrated, at San Bernardino, Calif., an entire trainload can be handled at one time.

when the weather in the eastern part of the country is cool the only refrigeration needed for oranges is enough to keep them from warming up excessively while crossing the hot desert region of the Southwest. By blowing cold air at a temperature of about 25° F. through the loaded cars (fig. 72) for about 8 hours the temperature of the loaded fruit can be reduced to 40° or lower. Then the cars are closed tightly until after the desert region is crossed and the fruit is

satisfactorily protected during this hazardous part of the trip. Thereafter the ventilators are opened and advantage is taken of the cool outside air.

The shipment of pears from the Pacific Northwest offered other opportunities for important modifications in refrigeration with substantial savings to the industry. Pears are far more exacting in their temperature requirements than are oranges, but it was found that when they are properly precooled the size of the carload could be increased from 520 boxes, which formerly was standard, to 640 or even 744, thus reducing the number of cars required to handle the crop and giving the railroads a greater revenue per car. Furthermore, since the cost of transit refrigeration is upon a carload basis, the heavier load resulted in a lower cost per box. The savings to the northwestern fruit industry by use of new methods developed in experimental work of the Department are conservatively estimated at more than a million dollars annually. Practically every kind of fruit and vegetable moving to domestic or overseas markets has similarly benefited in some manner from the Department's handling, transportation, and storage investigations.

D. F. FISHER and C. W. MANN,  
*Bureau of Plant Industry.*

**T**UBERCULIN of Greater Purity and Efficiency Developed by Department The constant search for improved methods of producing biological products for livestock disease prevention and control, by scientists of the Bureau of Animal Industry, has led to the production, from cultures on a new synthetic medium, of a tuberculin that is more efficient as a diagnostic agent than tuberculin produced by other methods. Prior to the development of the new tuberculin, the testing of cattle and other susceptible animals for tuberculosis was conducted with tuberculin made essentially in the same manner as the original product developed by Robert Koch more than 40 years ago.

Although tuberculin made according to the Koch method has given excellent results, it is not a perfect product. In some cases about 2 in 1,000 animals tested, it has been impossible to find lesions of tuberculosis in reacting cattle. In other cases, tuberculous cattle have failed to react to the first test. It was with the hope that facts might be developed that would lead to a reduction of this small percentage of error that the investigations here discussed were undertaken.

The medium used for the Koch tuberculin consists of a clear broth, made from lean beef or veal, to which 1 percent of peptone, 4 to 7 percent of glycerin, and 0.5 percent of salt are added.

This mixture is then inoculated with pure cultures of tubercle bacilli. The bacteria grow on the surface of the broth, forming a film or pellicle which gradually extends until it covers the entire surface. This growth takes place over a period of about 2 months.

At the end of the growing period the broth cultures are sterilized, the dead bacteria are removed by filtration, and the clear, sterile filtrate is concentrated to the desired degree. A suitable preservative is then added. The final product, which is used in testing cattle, contains not only the soluble substances derived from the growth of the tubercle bacilli on broth but also any portions of the culture medium which

have not been used up during the growth of bacilli. It is generally recognized that the Koch or broth tuberculin is extremely complex. It always contains considerable quantities of unused glycerin. In addition there are unused nitrogenous substances derived from the beef as well as similar nitrogenous protein materials derived from the peptone which is added to the broth.

### Synthetic Medium

The new synthetic medium developed by the Bureau for bovine tuberculosis contains no protein whatever. The nitrogen required by the bacteria for their growth is supplied by the pure, crystalline amino acid, asparagin, while the carbohydrate and mineral needs of the bacteria are furnished by pure glycerin, dextrose, magnesium sulphate, potassium phosphate, and derivatives of sodium and iron.

Since the active substance in any tuberculin is derived from the growth of the bacilli, the strength must depend primarily on the

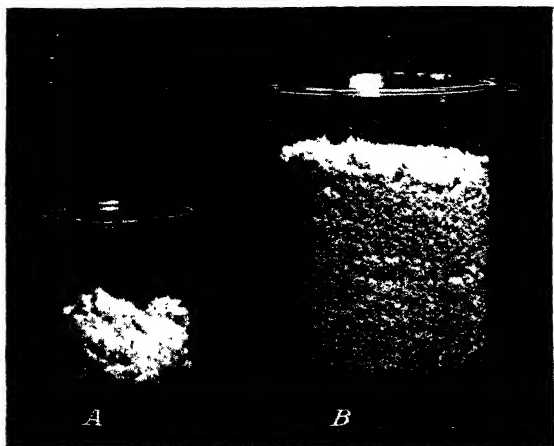


FIGURE 73—Comparative growth of tubercle bacilli obtained from 1,000 cubic centimeters of culture medium: A, Growth from broth medium; B, growth from synthetic medium.

amount of growth per 100 cubic centimeters of culture fluid, provided the bacteria are the same. Careful investigations and weighings of tubercle bacilli have shown that, under favorable conditions, on the average 0.5 gram of bacilli, dry weight, may be obtained from 100 cubic centimeters of the ordinary glycerinated broth. The synthetic medium affords a vastly greater amount of growth. From each 100 cubic centimeters of culture fluid there is obtained, at the height of the development, an average of 2 grams of tubercle bacilli, or approximately four times as much as is obtained from the same quantity of glycerinated broth medium (fig. 73). So far as known, no other synthetic culture medium for tubercle bacilli has afforded such abundant growth. As was to be expected from the greater growth of bacteria, tuberculin prepared from the synthetic-medium cultures was found, when tested on tuberculous guinea pigs, to be very much more potent than that derived from cultures on the broth medium.

Another advantage afforded by the use of the synthetic medium lies in the purity of the final product, that is, the tuberculin. As previously stated, the Koch, or broth tuberculin, always contains, as impurities, considerable unused residues of the culture medium. The newer tuberculin, on the other hand, is essentially a pure solution of the products of the tuberculosis bacillus. This result was attained by adjusting the constituents of the synthetic culture medium so that the bacteria use practically all of them. The final tuberculin contains only

products which are derived from the tubercle bacillus itself. Since the reaction of tuberculous cattle to tuberculin is caused only by the products of the tubercle bacillus, it is evident that the new tuberculin is much purer than the older product.

### New Tuberculin More Effective in Tests

The real test of a biological product, however, is in the actual potency when applied to animals. More than 40,000 comparative tests of the old and new tuberculins have been made on cattle. In one series 13,288 cattle were tested simultaneously with both tuberculins by the intradermic method. Of these, 1,127 gave reactions (swellings at site of injection) to the broth tuberculin and 1,268 reacted to the new tuberculin. All these reactors were slaughtered and lesions of tuberculosis were found in 1,205. Every one of these reacted to the new tuberculin but 135 did not react to the old tuberculin. No tuberculous animal in the series reacted to the broth tuberculin without at the same time reacting to the new tuberculin. In the case of the cattle which reacted to both tuberculins, the great majority showed more pronounced and more clear-cut reactions to the new tuberculin.

Since the new tuberculin was thus proved to be more effective when used for diagnosis under practical field conditions, the Bureau discontinued the production of the old tuberculin in April 1934. In its place, the tuberculin produced from cultures on the new synthetic medium is now being used exclusively by the Bureau of Animal Industry in official tuberculosis-eradication work. This new tuberculin is produced in amount sufficient to test more than 18,000,000 cattle annually.

M. DORSET, *Bureau of Animal Industry.*

**V**EGETABLE Insects Can be Controlled Without Arsenical-Residue Hazard The control of insects that attack vegetables and small fruits by means that will not leave harmful residues on the marketed product has continued to receive the attention of the Department. The work of the previous year has been intensified and broadened in scope, and on the basis of this research a mimeographed circular has been issued containing revised recommendations for the control of a number of important pests of these crops. These recommendations emphatically provide that arsenicals or other poisons should not be used after the appearance on the plant of fruit or foliage that would be sent to market or consumed, except in cases in which washing or stripping would remove all harmful residues. In addition to stressing the importance of employing insecticides that do not incur the hazard of harmful residues, special emphasis is given to the time and method of applying insecticides, and supplementary control measures, such as field sanitation and cultural practices, particularly the thorough destruction or utilization of crop remnants after harvest, are recommended.

In this search for substitutes for arsenicals and other means of eliminating harmful residues, extensive experiments have been conducted in Ohio, Virginia, Florida, North Carolina, South Carolina, Louisiana, and California. These experiments have been concerned

chiefly with cabbage, and in general, the results have substantiated those obtained during previous seasons, to the effect that arsenicals and similar inorganic insecticides may be applied to this crop up to within 40 days of harvest without danger of harmful residues remaining on the marketed product. This means that cabbage may be treated with arsenicals before the plant begins to form a head, since all leaves which develop prior to that time have dried or are discarded at the time of harvest.

#### Use of Derris Combinations

These studies have indicated that derris-root powder containing from 0.5 to 1 percent of rotenone mixed with talc or tobacco dust as a diluent is effective in controlling the common species of cabbage worms. In general, the pyrethrum-dust mixtures and hellebore have been less effective than the derris combinations. The number of treatments and the cost involved in obtaining cabbage-worm control with derris combinations on a commercial basis have not yet been determined for application under the diverse conditions existing in the different parts of the country where cabbage is an important crop. A dust mixture composed of 1 part of paris green and 9 parts of hydrated lime is effective against the common species of cabbage worms, but its use is limited to the early stages of the plant growth, when there will be no danger of harmful residue.

The Department has not had an opportunity to conduct any extensive experiments on the control of cabbage pests on cauliflower, broccoli, kale, or collards in order to determine the possible utility of arsenical substitutes. It is believed, however, that the compounds containing rotenone and pyrethrum should give approximately the same results on these crops as when used on cabbage. There should be little or no danger in the treatment of these crops with arsenicals when they are in the seedling stage. The leaves surrounding the heads of cauliflower are often used for food, and the treatment of the crop should be so regulated that these leaves do not bear any harmful residue. Especial precautions should be exercised in the use of arsenicals or other poisonous materials on broccoli, since the nature of the edible portion of this plant is such that residues are retained for a considerable length of time and there is little likelihood that they will be removed by washing or stripping. Since fields of harvested cabbage and other cole crops serve as sources of infestation to new plantings, particularly in the South, crop remnants should be destroyed or utilized.

#### Rotenone Effective in Bean Beetle Control

Extensive tests in Ohio and Virginia during 1934 have indicated that the Mexican bean beetle can be controlled effectively, without danger of arsenical residue, by the application of derris sprays or dusts. These sprays or dusts gave excellent foliage protection and increased the yield markedly over that of the untreated plots. In general, a better quality of control has been obtained with the derris-root sprays than with the derris dusts. The derris-root spray was prepared at the rate of  $1\frac{1}{2}$  to  $2\frac{1}{2}$  pounds of finely ground derris root, containing 4 percent rotenone per 50 gallons of water (equivalent to 0.015 to 0.025 percent rotenone in the spray mixture), with appropriate adjustments for varying rotenone content of the derris root. Cryolite

at the rate of 3 pounds to 50 gallons of water has given results equal to those from magnesium arsenate at the rate of 2 pounds to 50 gallons of water, when applied properly. The derris-dust mixtures contained from 0.5 to 0.75 percent of rotenone with talc, tobacco dust, or ground marc as a diluent.

Tests with the celery leaf tier have shown that compounds containing rotenone are not effective against this insect and that pyrethrum is apparently a specific poison for the pest.

Damage by the pepper weevil has been materially reduced in some areas, especially in California, by the destruction of nightshade, the principal winter host plant of this insect. No insecticidal treatment for the control of this pest has yet been devised which does not involve an undue risk of harmful residue remaining on the market product.

Studies in the control of melon and pickle worms on fall-grown squash in South Carolina have indicated that a derris-root powder containing from 0.5 to 1.5 percent of rotenone is effective against these insects, and a profitable return from the crop has been attained even under conditions that render necessary several treatments at intervals of from 7 to 10 days. Sulphur appears to be an effective diluent for derris-root powder when employed against these pests, and the addition of from 10 to 25 percent of talc or clay, by weight, improves the dusting qualities of the mixture. Cryolite and paris green are effective, and there is no danger of harmful residues when they are applied prior to the formation of the fruits. Calcium arsenate has not proved satisfactory in the control of these insects.

In tests against the turnip aphid in the South, derris-root powder containing 1 percent of rotenone with equal parts of finely ground tobacco dust and sulphur as diluents gave good results, even under the relatively low temperatures prevailing when this pest is most numerous.

Preliminary tests indicated that compounds containing rotenone are effective against the harlequin bug a common pest of many of the important vegetable crops.

#### Unsatisfactory Results against Tomato Hornworm

Unsatisfactory results were obtained with compounds containing derris or pyrethrum when directed against the tomato hornworm, which was unusually abundant in certain sections of the East during the past season. Fall plowing is an effective aid in the control of this pest.

As a result of extensive experiments in the State of Washington, it was shown that sprays containing approximately 0.01 percent of rotenone were effective against the raspberry fruit worm, particularly when they were applied after the blooms appeared on the plants, supplemented by a spray containing arsenicals prior to the development of the blossoms. With this procedure no harmful residues were left on the harvested berries.

Injury by the strawberry weevil can be lessened by burning over its hibernating areas. Since such burning is necessary only over areas within 100 feet of strawberry fields and can be conducted during the winter, this method has a very practical application.

D. J. CAFFREY,  
*Bureau of Entomology and Plant Quarantine.*



## VITAMIN A Value of Plant Feeds Fully Accounted for by Their Carotene Content

In the preceding Yearbook of Agriculture, the writer reported experiments which showed that the health and productiveness of cattle are very dependent on the quantity of vitamin A which they receive in their rations, that these animals usually receive most of their vitamin A in the roughage, and that their health and productiveness are, therefore, commonly dependent on the kind and quality of their roughage. Recent research in the Bureau of Dairy Industry and in other scientific laboratories now throws more light on the chemistry of vitamin A and its distribution in various farm feeds, and on certain important practical considerations regarding the relation between its chemistry and color and its appearance in milk and butter.

Vitamin A appears in the tissues of animals as a nearly colorless highly complex alcoholic compound associated with the fats. Plant tissues, on the other hand, contain several closely related yellow pigments called carotenes. These pigments are hydrocarbons, and are easily converted by animals into colorless vitamin A when consumed as a part of the food. So far, colorless vitamin A has not been found as a natural constituent of plant tissues, and a number of investigations, particularly a recent careful investigation in the Bureau of Dairy Industry on alfalfa hay, have indicated that this compound does not occur in plants, and that the vitamin A activity of plant feeds is wholly accounted for by their carotene content.

The vitamin A content of feeds has been determined in the past in time-consuming experiments involving the rate of growth of rats. Recently, however, fairly rapid and accurate direct chemical methods for the determination of carotene in plant tissues have been developed. As the carotene content of plant tissues is a measure of their vitamin A activity, this activity can now be more quickly and accurately determined in plant tissues by carotene determinations than by the older form of feeding experiments with rats.

### Carotene Content of Farm Feeds

Carotene determinations made on the alfalfa plant show that the fresh green plant material cut in the bloom stage is a very rich source of this pigment. When this material is dried and cured for the purpose of making hay a large proportion of its carotene is destroyed, the amount of destruction depending on when the hay is cut and how it is cured. Hay cut in the bloom stage or earlier and cured without exposure to rain or to too much sunshine retains a considerable proportion of its green color and of its carotene content; hay cut in the seed stage or exposed to rain, or for many days to the sun, loses most of both color and carotene. Carotene determinations on a few farm feeds give a general view of the situation, though they are not yet numerous enough to be regarded as reliable averages. The comparatively few results reported in table 13 show that the carotene content, even of a given feed, varies considerably, but that there tend to be very large and more or less characteristic differences between different feeds. The grades of alfalfa and timothy hay given in the table are the standard United States grades which have been described in detail by the Bureau of Agricultural Economics, and the grading of which depends on color, and, in the case of alfalfa, also on leafiness. The No. 1 grade is that which has the most leaves and the most intense green color.

TABLE 13.—*The carotene content of certain farm feeds, given as milligrams per gram of dry matter in the feed. The water content of the feeds is given in order that their original carotene content may be calculated*

| Feed   | Deter-<br>mina-<br>tions | Water   | Carotene per gram of<br>dry matter |                 |                 |
|--|--------------------------|---------|------------------------------------|-----------------|-----------------|
|  |                          |         | High                               | Low             | Average         |
|  | Number                   | Percent | Milli-<br>grams                    | Milli-<br>grams | Milli-<br>grams |
| Fresh green alfalfa.....                       | 5                        | 79.6    | 0.412                              | 0.267           | 0.326           |
| U. S. No. 1 alfalfa hay.....                   | 6                        | 8.6     | .117                               | .034            | .045            |
| U. S. No. 2 alfalfa hay.....                   | 2                        | 8.6     | .016                               | .014            | .015            |
| U. S. No. 3 alfalfa hay.....                   | 2                        | 8.6     | .012                               | .001            | .007            |
| U. S. No. 1 timothy hay.....                   | 3                        | 11.6    | .024                               | .009            | .019            |
| U. S. No. 2 timothy hay.....                   | 1                        | 11.6    | .....                              | .....           | .008            |
| U. S. No. 3 timothy hay.....                   | 2                        | 11.6    | .011                               | .002            | .006            |
| Fresh green Kentucky bluegrass.....            | 5                        | 68.4    | .620                               | .424            | .522            |
| Fresh green corn plant; cut, for ensiling..... | 2                        | 78.1    | .115                               | .070            | .092            |
| Corn fodder, old and dry.....                  | 2                        | 9.0     | .006                               | .002            | .004            |
| Corn silage.....                               | 8                        | 73.7    | .060                               | .013            | .039            |
| Wheat straw.....                               | 1                        | 8.4     | .....                              | .....           | .002            |
| Corn: ripe grain, yellow dent, and flint.....  | 6                        | 11.3    | .010                               | .003            | .006            |
| Carrots: yellow, garden.....                   | 4                        | 88.3    | 1.128                              | .709            | .906            |

### Relation of Butter Color and Vitamin A

Cows fed on ordinary farm feeds consisting of plant materials depend on the carotene content of the feed for the vitamin A activity of their milk and butter. A part of the carotene of the feed appears as such in the milk fat; another part is converted into colorless vitamin A and appears in the butter as this compound. When the cow is fed on materials low in carotene, the carotene and colorless vitamin A of the milk fat become gradually less and less; the total vitamin A activity of the butter may be 20 times as great on feeds high in carotene as on feeds low in carotene.

The carotenes are the only yellow plant pigments which appear in milk fat in considerable amounts; hence the natural yellow color of cream and butter is due almost entirely to the carotene content. It is an important practical question how far this yellow color is a measure of the vitamin A activity of these dairy products. There are congenital differences between the colors of milk fat secreted by different breeds of cows. Guernseys and Jerseys, for instance, secrete milk fat which has a higher yellow color than that of Holsteins and Ayrshires on the same feed. Experiments have shown that those breeds which secrete the fat with the higher yellow color tend to put more carotene and less colorless vitamin A into the fat than the others, so that the higher colored milk fat of Guernseys is not likely to have any greater total vitamin A activity than the lower colored milk fat of Holsteins, as long as the two breeds are kept on the same kind of feed. The yellow color of milk fat is, therefore, not a good index of the vitamin A activity when the fat of different breeds on the same feed is compared.

But the differences in butter color which can be produced by different kinds of feed are much larger than those which occur among different breeds on the same feed. The butter color of a given breed of cow is rarely as much as twice that of another breed on the same feed, whereas it is easy to reduce the butter color of an individual cow of any breed to less than one-tenth of the original level by changing her from good pasture to a ration of grain and U. S. No. 3 timothy hay. Changes in yellow color so caused are accompanied by roughly proportional

changes in vitamin A activity. As the changes in butter color produced by feed changes, and also the accompanying changes in vitamin A activity, are so much larger than the breed differences which are not an index of vitamin A activity, the natural yellow color of the milk fat is, in general, a fairly good rough index of its vitamin A activity.

EDWARD B. MEIGS, *Bureau of Dairy Industry.*

## WATERFOWL Breeding Grounds of Far North Now Poorly Tenanted

While everything possible is being done to restore unwisely drained and cultivated areas in the United States to waterfowl, it must not be

forgotten that far to the north there are extensive nurseries to which an adequate breeding stock of the birds must annually be returned.

Investigations conducted by the Bureau of Biological Survey afford many specific instances of excellent breeding grounds that are poorly tenanted, and indicate that this condition prevails over immense areas. The breeding population is relatively sparse over the Canadian and Alaskan ranges of several species of waterfowl that are important by reason of their former abundance and their wide distribution in the United States during their migrating and wintering. Observers of the southward waterfowl flight of 1934 reported the returning flocks from northern nesting grounds as the smallest on record.

Sportsmen and naturalists in the fall of that year were prepared to expect only meager returns from the few nesting grounds that still remain in the drought-parched areas of our northern plains, both in the United States and the Prairie Provinces; but farther north there are still suitable breeding grounds that afford hope for the future—if an adequate seed stock is maintained.

Beyond the northern boundary of the section most affected by the great drought—a curving line that crosses central Canada between Lake Winnipeg and the Rocky Mountains, an area stretching from Hudson Bay to the Rockies and from the Saskatchewan Valley north to the Arctic Ocean—lies a region aggregating upwards of a million and a half square miles that would seem to have been prepared by Nature especially for a waterfowl nursery. Its inherent productivity is the result of a series of great geologic and climatic processes, the most important of which were exerted by the vast ice fields of the glacial period and the readjustments that followed their disappearance. Practically the entire area was then ground and scoured, violent shifts of the soil took place, the drainage systems underwent drastic changes, and myriads of new lakes were formed.

After the recession of the ice many thousands of years passed while Nature clothed the bare rocks with lichens and mosses, fertilized the sterile soil with the products of decayed vegetation, and finally covered the terrain with forests and lesser plants. Through the slow process of encroachment by vegetation, thousands of lakes became marshes and eventually solid ground. Other thousands are still in the process of being filled.

The lichens and mosses, which have so effective a role in first clothing a newly born land, still form an important part of the vegetative cover and make much of the area a vast sponge that receives moisture avidly, but dispenses it with reluctance. Other classes of plants, spread by wind and water and encouraged by the almost con-

tinuous sunlight of the long summers, have helped through the ages to build up a varied and prolific invertebrate and vertebrate fauna, a teeming biota whose members are mutually interdependent. Of this great aggregation the waterfowl are a part.

### Vast Number of Lakes and Marshes

Over this vast area of a million and a half square miles, the lakes probably average one to the mile, despite the fact that a few are 200 or 300 miles long. Thus, by a conservative estimate, there are in this region more than a million lakes and marshes virtually unmodified by man's presence, where drought is unknown, and where the food and shelter for waterfowl are ample. Distribution and migration studies show that a large proportion of the waterfowl species most important to wildfowlers not only of the Mississippi Valley but also of both the Pacific- and Atlantic-coast regions, nest naturally in this great area.

From November to mid-April this region is fast frozen, but with the melting of the snow and ice the eager waterfowl return to their ancestral homes there, the earliest following closely the retreating ice. Among the first are the swans, which subsist largely at this season on the roots of the broadleaved cattail (*Typha latifolia*). Shortly afterward follow the Canada goose (*Branta canadensis*), the snow goose (*Chen hyperborea*), Ross's goose (*C. rossii*), and the white-fronted goose (*Anser albifrons*). All these gather at first in the larger marshes and the deltas, where they rest and feed on the sprouting heads and the roots of *Equisetum*, locally called goosegrass, a very abundant plant. Later these geese, as they work their way northward, have recourse to the overwintered berries of a number of trailing upland shrubs, whose fruit is available in spring, when some of the waters are still icebound.

With the geese come ducks of more than a dozen species, and these seek first the larvae, and probably the eggs, of toads and frogs, and the snails of two genera, *Limnaea* and *Planorbis*, that develop by myriads in the waters. Insect life is enormously abundant, and the larval forms of those that develop in the water are especially important. These include May flies (Ephemeridae, both nymphs and adults); dragonflies (nymphs); water bugs and water beetles; and the young of many other smaller insects. Even the thronging larvae of mosquitoes are eaten by the young ducks. As the season progresses the marshes are filled with many plants that furnish food and shelter, including the large reed *Phragmites phragmites*, sedges (*Carex utriculata* and *C. aquatilis*), great bulrush (*Scirpus lacustris*), common pondweed (*Potamogeton natans*), fennel-leaved pondweed (*P. pectinatus*), white-stemmed pondweed (*P. praelongus*), clasping-leaved pondweed (*P. perfoliatus*), and northern pondweed (*P. alpinus*). Sweet flag (*Acorus calamus*), yellow pond lily (*Nymphaea advena*), water persicaria (*Polygonum amphibium*) and other smartweeds, and the broad-leaved sagittaria (*Sagittaria latifolia*) also abound in suitable places.

That this great region no longer harbors a reasonable share of the teeming waterfowl population that bred there in the early days is most discouraging to conservationists. Old residents testify to a reduction of 75 percent in the past 20 years. Today, with no change in the physical environment, and with a food supply that would still suffice for the former unparalleled wealth of bird life, these myriad swamps and lakes are occupied by scarcely a tenth of their potential waterfowl

population. We have not yet exterminated any of the thirty-odd species that formerly graced this great waterfowl paradise, but we have allowed several of our most beautiful and useful species to be reduced to a pitiful remnant.

Although about 75 percent of the waterfowl shot in North America are taken in the United States, an overwhelming majority of these birds (about 85 percent) are produced in Canada and Alaska, and if the time ever comes when certain of the species are no longer represented in the flocks that come from the far-northern breeding grounds, we shall know that they are gone forever. We have already lost the Labrador duck and several other North American birds whose tremendous populations seemed to early observers to insure their perpetuation, and it is none too soon to take thought of the danger suggested by the rapid diminution of any species that is subject to special pursuit.

### The Lesson of the Passenger Pigeon

The folly of relying alone on the presence of extensive breeding areas to perpetuate a threatened species is well illustrated by the story of the extermination of the passenger pigeon. In 1860 a legislative committee of Ohio declared:

The passenger pigeon needs no protection. Wonderfully prolific, having the vast forests of the north as its breeding grounds, traveling hundreds of miles in search of food, it is here today and elsewhere tomorrow and no ordinary destruction can lessen them.

Ten years later this pigeon, which was numbered among the millions in the memory of many people now living, had become scarce. Within 30 years it was practically extinct, and the last known representative of its race died in a zoological park 20 years ago.

It is well, therefore, before it is too late, that we be warned by the rapid diminution of several of our waterfowl species, the numbers of which a generation ago recall today the scoffings of the last century regarding the passenger pigeon. Unless we take care of the stock that is needed to bring back to its maximum productivity the great northern breeding grounds of the wildfowl, our efforts to restore this great resource by other means will bear but small and bitter fruit, for we shall be without the breeding stock to populate these ancestral grounds.

If, on the other hand, the nature-minded people of North America really wish it, the waterfowl paradise of the North can again welcome to its marshes the hordes that were the wonder of former times. To this end, it is necessary to spare and send back each spring to these fertile nesting grounds a yearly increasing stock of the beautiful species that still carry on there.

EDWARD A. PREBLE, *Bureau of Biological Survey.*

**W**ATERFOWL Problems Clarified by Study of Gunning Practices With the alarming decrease in waterfowl numbers in North America in recent years, sportsmen and conservationists have been faced with a problem of national importance. The Bureau of Biological Survey, charged by the Migratory Bird Treaty Act with the custodianship of the waterfowl while they are in the United States, has made extensive

studies of the factors affecting the birds. Investigators have obtained essential data on breeding conditions, on natural enemies, and on the potential resources of the waterfowl; also they have studied modern gunning practices.

The destructiveness of any modern hunting method is not so serious when considered alone, but when the various devices and practices are used in combination, they are capable of great abuse. The battery, sinkbox, decoy, scull boat, and repeating gun all become much more deadly when used with bait, for instance.

The baiting practice is vigorously condemned by many and highly praised by others, but this divergence of opinion may be somewhat clarified by pointing out that "baiting" refers specifically to the use of artificial food to attract birds to be killed, whereas "feeding" is the provision of artificial food for all other purposes. Baiting was thus not developed through any altruistic spirit to help waterfowl but to facilitate the killing of birds. The bait (usually grain, such as corn or wheat) is commonly placed within gunshot of blinds, though the methods vary somewhat in different sections of the country. The period of baiting also varies somewhat, but in most areas it covers slightly more than the gunning season and often ceases when the most inclement weather develops—when there is the greatest need for extra food. Only comparatively few of the better clubs continue to feed as long as there are birds left, or until spring migration starts.

Bait probably gives the average gunner a 100-percent advantage, and members of clubs that bait may have fair success in their shooting even though few birds are in the general section. Baiting concentrates the waterfowl in a limited area and quickly tames the birds.

By holding birds in an area where natural conditions would not favor them, baiting, to some extent at least, prevents migration. In an area subject to severe winter freezing this may result in serious losses after the close of the gunning season, when from the standpoint of shooting there is no further occasion for feeding.

In rare cases some advantages accrue from baiting; for instance where a club with large and well-protected holdings reduces the kill that would otherwise occur if the property were open to public shooting. A number of large clubs where baiting is carried on but where only moderate or little gunning is done may serve almost as sanctuaries at private expense. On a few of these, more birds are produced than are killed. It is regrettable that such cases cannot be considered representative of the average club that baits.

### Serious Evils From Use of Repeating Guns

Some serious evils of gunning are sometimes brought about through the use of automatic and pump guns, which throughout the country appear to be used more commonly than either the double- or single-barreled gun. The objections to the repeating guns are that in the hands of good shots they facilitate slaughter, and in the hands of less experienced shooters they produce a tremendous amount of crippling. The hunter using a repeating gun is tempted to depend too much upon a barrage of fire in the direction of a flock without taking time to single out his bird. Consequently the standard of accuracy is lowered and the percentage of cripples enormously increased. It rarely happens that one can get more than two shots while the birds are within effective range.

Decoys are used in varying numbers and in many different ways in various parts of the country. Like other methods of gunning their use has greater application as the birds decrease, and there is no question that in most sections they greatly facilitate gunning and increase the kill of birds. Where decoys are used, it is not uncommon to see the ducks alight within a few feet of a blind.

Battery shooting is one of the most criticized methods of gunning. It is used mainly in taking diving ducks in broad waters where the birds cannot be gotten at from shore. Under favorable conditions battery shooting may be deadly. Under Federal regulation it is permitted only in coastal waters. The battery is usually set out with decoys and is generally placed over a baited area or over a natural feeding ground or in a flight lane. When placed near the shore, the battery generally ruins the shooting for gunners on shore. Like the scull boat, it tends to keep the birds continually stirred up, which prevents their resting or feeding. Because batteries are so easily and quickly moved, it is difficult to regulate their number or position on a body of water.

A marked difference may be noted in gunning methods in various sections of the country. Usually the greatest refinements in technic and methods of gunning are found in sections where the birds are scarcest. Methods of gunning for migrants and winter residents are often vastly different because of the varying nature and habits of the birds under their several conditions. The blinds used are of a wide variety, some being temporary affairs hastily built, while others are elaborate, costly, and permanent.

Often, as would be expected, hunting methods vary, depending upon the species, or in the case of a single species, the type of environment. Some of the practices involved are highly technical and require great judgment and experience on the part of the gunner, while others require little more than ability to pull the trigger.

CLARENCE COTTAM, *Bureau of Biological Survey.*

## WATERFOWL-RESTORATION Program Undertaken by the Government

Early in 1934 the Secretary of Agriculture, by direction of the President, appointed the President's Committee on Wildlife Restoration to study wildlife problems with particular emphasis upon measures to rehabilitate the rapidly vanishing waterfowl population. This committee—Thomas Beck, chairman, J. N. Darling, and Aldo Leopold—made a thorough canvass of all aspects of the situation, studied a mass of material previously assembled by the Bureau of Biological Survey, and presented a report. Shortly thereafter, under the leadership of Mr. Darling, the Bureau of Biological Survey undertook a national program of waterfowl restoration.

Being in accord with the Administration's policy for the removal of submarginal agricultural land from crop production, the refuge-acquisition program has been in part financed by a substantial sum allotted from emergency appropriations. The drought-relief measure has also furnished funds with which to acquire in drought areas land that is suitable for wildlife, and an Executive order of May 28, 1934, made directly available to the Biological Survey an additional million

dollars with which to carry forward the program. Altogether, funds for the acquisition of land for migratory-bird refuges amount to \$6,000,000, supplemented by \$2,500,000 for refuge development. With these resources and the data previously assembled by the Biological Survey regarding desirable refuge sites, the Bureau was able to move immediately toward the fulfillment of the wildlife-restoration program.

Since the main objective of this program is a more abundant waterfowl population, it has obviously been necessary to consider first the control and improvement of conditions conducive to the production of the various species. Consequently, the Biological Survey concentrated its initial efforts on the breeding areas within the boundaries of the United States, the most important of which extend from the Great Lakes area to eastern Montana, and from the Canadian border southward. Consideration was also early given to several major projects in the Northwest, in the coastal section of North Carolina, and in the White River Bottoms, Ark. Tremendous handicaps surround the purchase of lands of the character desired for refuge purposes, which in about 80 percent of the cases are complicated by earlier drainage operations or by other incumbrances. In spite of these obstacles in the way of prompt and equitable acquisitions, approximately 550,000 acres in 28 units had by March 31 been taken under contracts of purchase, and about 100,000 acres were being taken by judicial proceedings, several million additional acres were in prospect.

#### Refuges in Major Waterfowl Flyways

The program contemplates ultimately a series of major refuges extending through the four major waterfowl flyways from the Canadian boundary to the southern limits of the United States. Most of these refuges will contain not less than 20,000 acres each, and some will be much more extensive. So far as physical conditions permit, these large refuges will be approximately 300 miles apart, and will be supplemented by less extensive sanctuaries. Because nesting places play a role of vital importance in any well-considered rehabilitation program, there will be a concentration of refuges for that purpose in the northern reaches of the United States. An extensive system of resting and feeding areas also will be provided on the migration routes and on the wintering grounds.

Mere acquisition of the land and water embraced within the areas selected will, however, not suffice to realize the purpose of the restoration program. Many of the waterfowl concentration areas have been destroyed by drought and by drainage operations or have been so reduced as to offer only the most meager attractions to the birds. A major problem, therefore, is the restoration of an environment that will once more attract them. Such work is being undertaken on every one of the projects selected for this program in the nesting area. For the most part the improvement will be the removal of drainage devices previously installed and the construction of dikes, dams, and water-control works, to impound and stabilize the waters that normally flow into these areas.

RUDOLPH DIEFFENBACH, *Bureau of Biological Survey.*



**W**EATHER Forecasts for California's citrus crop has returned to the State as much as \$135,000,000 in a single year. Its delivered value in the wholesale markets has been as much as \$167,000,000. Large as these returns appear, they are offset to a large extent by the heavy costs of production. Weather conditions play a very important part in the growing of the crop. Freezes in winter, unseasonably high temperatures in spring and summer, desert winds with extremely low humidity, and sometimes long-continued periods of rainy or foggy weather, all may seriously damage trees or crops. The California citrus grower probably is more "weather conscious" than any other producer of agricultural products.

California citrus growers do not suffer losses from adverse weather without a fight. Miles of windbreaks protect the groves in the windy districts from the full effects of heavy winds, and orchard heating for the protection of trees and fruit from the winter freezes has reached its highest development here.

Only the grower who keeps his grove in the best possible condition can get the largest return on his investment. Pest control is one of the most necessary of all orchard practices, and also is one of the major items in the expense of growing citrus crops. The total acre treatments per year in southern California alone are in the neighborhood of 125,000 and cost the growers approximately \$3,000,000. An additional \$3,000,000 is the estimated annual loss through damage to crops by pests in groves not treated, or treated with unsatisfactory results.

#### Relation of Weather to Spraying and Dusting

Control of pests is accomplished by fumigating with hydrocyanic acid gas, spraying with various materials, or dusting the trees with finely divided sulphur. Any of these methods may cause damage to fruit and trees if applied during or immediately preceding periods of adverse weather. In the coastal area fumigation is not begun until the temperature drops to 70° to 80° F. in the evening and in the interior not until the temperature drops to 80° to 85° F. Fumigation is discontinued whenever the tents become damp with dew. A heavy dropping of fruit also may occur if fumigation is done immediately before temperatures below freezing occur in the orchard, or before the onset of strong east winds from the interior, accompanied by excessively low humidities.

The degree of spray injury due to adverse weather depends on the spray material used, but excessively high temperatures or low relative humidities during or immediately following spray application in southern California citrus districts cause damage no matter what material is used. Some spray materials formerly used rather extensively in citrus groves have been eliminated almost entirely because of danger of weather injury. Definite data on which to base the limits of safety with regard to both temperature and humidity for various spray materials are not yet available, but the establishment of a number of temperature- and humidity-recording stations throughout the southern California citrus districts undoubtedly will bring this question much nearer to a solution.

The present policy is to stop all spraying with oil when the temperature is expected to rise above 100° F. or the relative humidity to fall

below 20 percent within 2 days. Lime-sulphur sprays are considered more dangerous in southern California, and their use is discontinued in that area when temperatures above 90° F. or relative humidities below 25 percent are in prospect. Damage caused by spraying with oil following the application of sulphur dust, in extreme cases as long as 2 months previously, often is intensified by high temperatures. Some lemon groves which received sulphur dust followed 2 weeks later by oil spray during the summer of 1934 lost in excess of 65 percent of their fruit and also suffered severe damage to foliage during the hot spell of July 25 to 27. Four or five days of favorable weather following treatment with sulphur dust or spray usually is enough to avoid danger, although injury has followed dusting even after two or three weeks in some cases.

### Temperature Range for Sulphur Dusting

Results secured from sulphur dusting are doubly dependent on weather conditions. In order to control the pests for which it is applied, air temperatures must be high enough to cause fuming of the sulphur particles, but if the temperature rises too high, burning of fruit occurs. In this case also it is not possible to name definite temperature limits, but generally speaking, sufficient fuming for control will not take place at temperatures below 80° F., and damage is likely to begin at temperatures above 100°. Relative humidities below 25 percent increase the amount of damage at any given temperature.

The Weather Bureau during the summer of 1934 began issuing special pest-control weather forecasts from its station at Pomona for the benefit of citrus growers in five southern California counties. Invaluable cooperation in the project has been given by pest-control operators, county agricultural commissioners, and farm advisers, and the Citrus Experiment Station of the University of California at Riverside. Daily forecasts of maximum temperature and relative humidity for a 48-hour period are made for 7 different points in the 5 counties. This is necessary because of the wide differences in temperature and humidity within relatively short distances, owing to differences in topography and distance from the ocean.

During the summer months changes in day temperatures in southern California citrus districts are due almost entirely to fluctuations in the strength of the sea breeze which blows inland from the Pacific Ocean. Any interference with the normal influx of cool air from the Pacific causes the land areas to heat up very rapidly; and conversely, a resumption of the normal sea breeze during the progress of a hot spell causes a rapid lowering of temperatures in the interior. The entire area is occupied throughout the summer period with marine air of high specific humidity, and relative humidity is always high except during periods of unusually high temperature. The forecasting of these summer hot spells is difficult because the balance between the forces causing the sea breeze and those tending to oppose it is easily upset.

During the spring and fall months the forecasting of day temperature and humidity in this area is considerably less difficult, because atmospheric changes take place on a larger scale and are more positive

in their action. During these periods the damp marine air over southwestern California is often replaced by much drier continental air, sometimes resulting in the relative humidity falling low enough to cause damage to crops with only moderate temperatures prevailing.

### Forecasts Broadcast Daily

The forecasts are broadcast from radio station KNX at Hollywood, Calif., at 12.14 p.m. each day, a time requested by fruit growers and pest-control operators to allow them to listen during the noon luncheon period. They also are placed on the teletype circuit maintained by the California Fruit Growers Exchange about 11.40 a.m., and thus made available to all the field offices of that organization. Many telephone calls and a few personal calls for the forecast are made to the Pomona office at an earlier hour.

On receipt of a forecast of temperature or humidity conditions which might cause damage, pest-control operations are suspended until the conditions moderate. Sulphur-dusting operations are not begun during the spring months until a period of day temperatures above 80° F. is forecast, and operations are discontinued when temperatures above 100° or relative humidities below 20 percent are forecast. Periods with temperatures satisfactory for dusting work in spring sometimes occur only at long intervals and last only a few days. Utilization of the forecasts makes it possible to make all preparations for the application of the dust beforehand.

Information regarding humidity conditions is also utilized in determining at what time of night dew will begin to form on the trees. Fumigating is done at night and must be discontinued as soon as moisture begins to form on fruit or foliage.

### Forecasts Utilized by Walnut Growers

While these special forecasts were first requested by citrus growers, the walnut growers of southern California are making use of them in their harvesting operations. A sudden change to high day temperatures and low humidity during the harvest season causes the walnut hulls to dry rapidly and cling to the walnuts, preventing them from dropping to the ground. As a result the nuts hang in the trees too long and develop color in the kernel, causing a reduction in grade.

During cool, damp weather the speed of the harvest is often governed by artificial dehydration capacity. If the nuts are removed from the trees and left in sacks or bins under these conditions, they are likely to depreciate in condition rapidly due to heating and development of mold. At the beginning of a period of hot dry weather there may be large quantities of walnuts ready to be harvested, but still hanging on the trees because the dehydrator cannot handle them fast enough. On the receipt of a forecast of high temperature and low humidity, all the mature nuts on the trees are removed and stored until they can be handled by the dehydrator, since the danger of heating and molding is greatly lessened with low humidity.

FLOYD D. YOUNG, *Weather Bureau.*

**W**EATHER Men of Many Countries Cooperate in the Second Polar Year About 50 years ago, 12 nations, namely, Austria, Denmark, England, Canada, Finland, France, Germany, the Netherlands, Norway, Russia, Sweden, and the United States, organized 14 expeditions to go into polar regions and establish stations to make simultaneous observations of meteorological, magnetic, and auroral conditions during the period from August 1882 to August 1883, according to a prearranged international plan. These expeditions rendered great service.

Yet many problems remained to perplex the students of meteorology, terrestrial magnetism, and atmospheric electricity. Accordingly, meteorologists in 1928 proposed that the First International Polar Year should be commemorated by a Second Polar Year exactly 50 years after the first one. The International Meteorological Organization, a world-wide association of meteorologists and geophysicists, appointed in 1929 the International Commission for the Polar Year, 1932-33. This organization invited the International Geodetic and Geophysical Union to cooperate in the undertaking. This invitation was accepted. Then began the task of enlisting the aid of the various countries and interested organizations, and carrying out the preliminary steps of the Polar Year program.

Forty-four nations signified their willingness to cooperate. The Department of Terrestrial Magnetism of the Carnegie Institution of Washington, the International Geodetic and Geophysical Union, the Permanent Council for the Exploration of the Seas, and the International Scientific Radio Union, joined whole-heartedly in the endeavor. The work of coordinating the program was done by the International Commission for the Polar Year, 1932-33, under the presidency of D. la Cour, director of the Danish Meteorological Service. This commission held many conferences, received and sifted numerous proposals, drew up detailed instructions regarding necessary observations, instruments, etc., and furthered the undertaking in many ways.

### New Stations Established

Meteorological and other stations already established in or near polar regions, and many stations in temperate and tropical regions, prepared for intense observational activity. New stations were established in the far North and the far South, to add to the existing network. The United States opened a station at Point Barrow, the northernmost point in Alaska, and undertook intensive work at College (Fairbanks), Alaska. Canada sent out three expeditions, one to Cape Hope's Advance in Hudson Straits, another to Chesterfield Inlet on Hudson Bay, and a third to Coppermine on Coronation Gulf. England sent an expedition to Fort Rae on Great Slave Lake, Canada. Sweden opened two stations in Spitsbergen (latitude 78° N.). Russia opened a number of stations in the far North of her territory, including one at Hooker Island, Franz Josef Land (latitude 80° N.). Other countries took similar action.

Thus with the collaboration of many nations the Second Polar Year began on August 1, 1932. It closed on August 31, 1933, in the Northern Hemisphere and on December 31, 1933, in the Southern Hemisphere. The meteorological work involved the customary observa-

tions at fixed hours 2 or 4 times per day, as well as the continuous registration of barometric pressure, temperature, humidity, wind direction and velocity, precipitation, and sunshine. It required frequent observations of clouds and weather as well as other phenomena.

Observations of the upper atmosphere were made by releasing small balloons, filled with hydrogen gas, and watching them through a theodolite (a telescope similar to a surveyor's transit with devices for measuring horizontal and vertical angles) to determine the free-air wind directions and velocities. Larger balloons were sent up carrying self-recording instruments to indicate the barometric pressure, temperature, and humidity of the air to great heights well into the stratosphere. When found and returned to the meteorological stations these instruments furnished valuable information.

For the first time on a large scale, balloons were used to carry radio-meteorographs, which sent radio signals to the earth depicting the barometric pressure and the temperature of the air continuously. This means of investigating conditions at great heights proved invaluable for sparsely settled regions where the chance of finding the instrument was meager. Moreover, it furnished a record immediately. Airplanes carrying self-recording instruments were also employed at various places, including Alaska, to determine conditions aloft.

In addition, a number of stations made observations of atmospheric and terrestrial magnetism and electricity.

#### Polar Year Charts to be Published

The purpose of the Polar Year was to study conditions on a world-wide scale, and preparations are now being made by the Deutsche Seewarte of Hamburg, Germany, to publish a weather chart for each day of the Polar Year covering the entire Northern Hemisphere, both land and sea. Practically all countries with territory or ships north of the Equator are contributing observations to this end, so that meteorologists may follow cyclones and anticyclones, cold waves, etc., anywhere around the world. Observations of winds and other conditions in the atmosphere from the ground to far into the stratosphere also are being published. By means of these, the circulation of the atmosphere from one hemisphere to the other, east and west, north and south, may be better understood, and weather forecasters will have facts by which to judge when, where, and even how the cold air from polar regions comes into conflict with the warm air from equatorial regions and produces rain.

L. P. HARRISON, *Weather Bureau.*

**W**EATHER Relations in Successive Months Studied by U. S. Meteorologists

The tendency of certain weather characteristics to persist for considerable periods is well known. Comparatively wet or dry, warm

or cool weather, of a given month often carries over into succeeding months. Two or more months in succession rather frequently have weather of the same general character. An examination of weather records shows that this tendency is somewhat pronounced for certain weather conditions and for certain areas; but it is not generally true for different kinds of weather in any particular area nor for all areas.

In fact some localities show quite as marked tendencies to opposite conditions from month to month as others do for agreement. The following summaries indicate these relations for selected States, based on the average State rainfall and average State temperatures for the four principal crop-growing months (May-August). The States, in general, represent areas in which different climatological conditions prevail.

For Nebraska (the records covering 58 years from 1876 to 1933), May rainfall was above normal 24 times and for these years June, July, August, and the summer (June-August) had above normal in just half the years and below normal in the other half. However, for the 25 years in which June had above-normal rainfall July also had above-normal rainfall 16 times and below normal only 9 times, making agreement between the 2 months in 64 percent of the years. For the 24 years in which July had above normal only 10 years had above normal in August. Considering only the months when rainfall was 1 inch or more above normal, no striking relations are shown except in the case of June with July. June had rainfall of 1 inch or more above normal in 9 years and for these 9 years July had above normal 7 times and below normal only twice.

In general, deficiencies of rainfall show a greater tendency to carry over from month to month than do excesses. In Nebraska for the 58 years of record May had 1 inch or more below normal 15 times and for these 15 years June had below normal 9 times, July 11 times, and August 9 times, while the summer, as a whole (June-August) had below normal 11 times. June had 1 inch or more below normal in 16 years and in 10 of these July also had below normal. But little relation is shown between deficiencies in July and August rainfall.

The records show a rather marked tendency in Nebraska for either an unusually wet or an unusually dry spring to be followed by a dry summer. Six years of the 58 had 1 inch or more above normal rainfall in the 3 spring months (March-May) and 4 of the 6 had below-normal rainfall in summer (June-August); 4 had 1 inch or more below normal in spring and of these 4 years, 3 also had below normal in summer.

### Warm Weather Has Tendency to Persist

With regard to temperature, there is a much greater tendency for warm weather to persist from month to month than for cool weather to carry over. When temperatures were below normal in Nebraska there were substantially the same number of opposite as of like conditions for the following months, except in June and July. June was 1° F. or more below normal 18 times in the 58 years and of these 18 years July also was below normal 12 times. However, during these 58 years of record in Nebraska the average May temperatures were above normal by 1° or more 23 times and for these 23 years, June had above normal 17 times, July 13, August 17, and the summer 18 times. Also for the 25 years when the June temperature was 1° or more above normal, 72 percent of the Julys were warmer than normal and also a like percentage of Augusts.

In the case of Ohio rainfall for the 61 years of record there is little or no relation shown between May and the succeeding summer months, either when May was comparatively wet or when the month had below-normal rainfall. However, for the 30 years when June had above normal July also had above normal 20 times, but for the 36

years when July had above normal August had like conditions only 15 times. The records show some interesting comparisons for the months having rainfall deficiencies in this State. For the 61 years of record May had 1 inch or more below normal 17 times and for these 17 years June had below normal 8 times, July 4 times, and August 10 times. However, for the 9 years with 1 inch or more below normal in June, July had below normal 7 times, or in 78 percent of the years, and August had like conditions 6 times.

The 46 years of record for Pennsylvania indicate that May does not afford a good index for the succeeding month's rainfall in that State. Here 12 of the 46 years had 1 inch or more below normal in May and for these 12 years June had below normal only 3 times, July 4 times, and August 5 times, while the summer, as a whole (June-August) had below normal only 3 times. However, for the 11 years in which the deficiencies in June were 1 inch or more, July also had below normal 9 times, and August 7 times; while for the 9 years in which July had deficiencies of 1 inch or more 7 of the 9 years had below normal in August also. Again for the 14 years when May had above-normal rainfall amounting to 1 inch or more, only 3 Junes had above normal, 5 Julys, and 6 Augusts. Here again conditions reverse themselves with June, for of the 9 years when that month had an excess above normal of 1 inch or more, 7 of the 9 had above normal in July also. For the 12 years when July had 1 inch or more above normal, the August record was 50-50.

#### Index Value of Temperatures in Pennsylvania

May temperatures in Pennsylvania appear from the record to afford a better index of conditions for succeeding months than does the rainfall. During the 56 years May was 1° or more cooler than normal 14 times and for these 14 years June, July, and August were cooler than normal 9 times, or in 64 percent of the years, while for the 15 Junes with deficiencies in temperature of 1° or more, 10 had below-normal temperatures in July, and 9 in August. In the 12 years when July was relatively cool 8 had below-normal temperatures in August. Pennsylvania shows also a decided tendency for a warm month to be succeeded by like conditions.

The record for Alabama, typical of the Southern States, shows a decided tendency for wet months to be followed by opposite conditions. For example, for the 50 years of record available, May had 1 inch or more above-normal rainfall 16 times and for these 16 years June had above normal 7 times and July only twice. There were 11 Junes with 1 inch or more above normal and for these 11 July had above normal in only 2 years, and August in 3. Also for the 8 years when July had similar excesses, there were only 2 years with above normal in August. However, there is shown for Alabama a much closer relation between dry months. For the 19 years when May had a deficiency of 1 inch or more of rainfall, 14 of the 19 also had below normal in June, 10 in July, and 12 in August. Again, for the 17 years with like deficiencies in June, July had below normal 11 times; for the 14 years with 1 inch or more below normal in July, August was below 10 times. Thus the records show a decided tendency in this State for a wet month to be succeeded by below-normal rainfall and for deficient rainfall to carry over into the succeeding months. However, when the spring and the summer seasons are considered as a unit there

is a marked seasonal relation shown. For example, during the 50 years under consideration in Alabama there were 21 springs (March-May) with rainfall 1 inch or more above normal and for these 21 years the succeeding summer (June-August) had above normal 15 times, representing 71 percent of the years. Again there were 22 springs with rainfall below normal to the amount of 1 inch or more and for these 22 the succeeding summer had below normal 14 times.

J. B. KINCER, *Weather Bureau.*

**W**HEAT Exporting from Northwest by U. S. Agency Meets Emergency Problem When the 1933 crop of wheat in the United States began to move from the farms, an emergency arose in the Pacific Northwest. This region, which comprises the States of Washington, Oregon, and Idaho, normally produces much more wheat than is consumed within the area. Therefore, a larger proportion of the wheat from the Pacific Northwest moves into export trade than is true of other parts of the United States. The principal type of wheat produced in this region is white wheat, chiefly used in the manufacture of cracker and biscuit flour.

On July 1, 1933, 41,800,000 bushels of wheat were carried over from the crops of previous years in Washington, Oregon, and Idaho. This carry-over, added to the crop of 83,000,000 bushels, brought total supplies for Washington, Oregon, and Idaho to nearly 125,000,000 bushels as compared with 108,000,000 bushels in 1932 and a 5-year average (1929-33) of 115,000,000 bushels. These excessive supplies in 1933 in the face of demoralized export markets made it practically impossible to dispose of the surplus from the Pacific Northwest without governmental aid.

Meanwhile, the short crop east of the Rocky Mountains had caused prices to advance until they were considerably above an export basis. Wheat in the Pacific Northwest became distressed because this region is far removed from consuming centers and prices in the region did not follow the rise at Chicago and other markets in the interior. With prices in the Pacific Northwest far below prices in other parts of the country, wheat and flour started to move in a large volume through the Panama Canal and in smaller amounts overland into the southeastern territory and the Atlantic States. This movement had a depressing effect on the entire domestic price level. Furthermore, growers and exporters faced serious congestion at numerous shipping points. The situation was extremely critical and interests in the Pacific Northwest urged the Department of Agriculture to take steps to relieve the situation. These appeals for assistance came from growers, exporters, millers, bankers, and other interests in the region. Grain dealers and millers in the Southwestern and Southeastern states also urged that steps be taken to protect their markets from the effects of sales of distressed wheat from the Pacific coast.

#### Marketing Agreement Entered Into

In response to these requests the Department made a careful study of the situation. After several hearings, a marketing agreement was entered into by the Secretary of Agriculture jointly with wheat



producers, grain exporters, and millers. The legal authority for this agreement was found in paragraph (2) of section 8 of the Agricultural Adjustment Act which gives the Secretary of Agriculture the power to enter into marketing agreements with those engaged in handling, in interstate or foreign commerce, any agricultural commodity or product thereof. The authority for using proceeds derived from processing and other taxes for the expansion of markets and for the removal of agricultural surpluses was found in paragraph (b) of section 12 of the act.

An association known as the North Pacific Emergency Export Association was formed to serve as a clearing house which arranged, through its members, the details of purchasing, shipping, handling, and selling wheat and flour for export from Washington, Oregon, and Idaho. The agreement provided, further, that the Agricultural Adjustment Administration reimburse exporters for the loss represented by the difference between the price at which the wheat was bought from the producers and the sales price for export in the world's markets. Purchases and sales of wheat and flour and the terms of such purchases and sales, as well as the approval of ship tonnage and destinations were subject to the approval of the Secretary of Agriculture. Fixed handling and selling costs, including milling, were provided for in exhibits attached to the agreement. All expenses of the association were prorated among the members who handled the exports.

One of the main features of the association was that its operations were conducted strictly through the existing regular agencies for handling both wheat and flour and the Government merely assisted in the transaction by assuming the loss between the domestic and export price. Another very important feature about the marketing agreement was that the association could never at any time be long more than 1,000,000 bushels of wheat. This preserved an orderly day-to-day merchandising operation and prevented the accumulation in the hands of the association of any large amount of wheat that would be burdensome and difficult to dispose of as was the case during stabilization operations of the Federal Farm Board.

### Portland Prices Gradually Worked Up

The association made its first purchases on October 19, 1933, and its first sales on November 1, 1933. Heavy purchases were made during November and Portland prices were gradually worked up to around 10 or 12 cents under Chicago. From December 1933 to May 1934, inclusive, a sufficient amount of wheat was bought to hold Pacific coast prices at about that relationship with Chicago. The activities of the association practically ceased at the time of the longshoremens' strike which tied up shipping from Pacific coast ports from May 9 to July 31, 1934. After the strike was concluded, the association completed its deliveries on sales which had been made prior to the strike. By October 1, 1934, the 1933 operations were practically complete, although a few forward sales still remained to be shipped for export.

The association purchased a total of 28,390,991 bushels of wheat up to and including October 4, 1934. It sold in the export market a total of 28,383,672 bushels, of which 21,846,284 bushels, or about 77 percent, were sold in the form of wheat and 6,537,384 bushels, or about 23 percent, in the form of flour. Approximately two-thirds of the wheat and flour shipped to foreign markets was shipped in foreign

vessels, and approximately one-third in vessels flying the American flag. About 76 percent of the wheat sold was shipped to China and Japan. Wheat was sold for shipment to the following destinations, in order of volume shipped: China, Japan, Ireland, England, Belgium, several countries in Central America and South America, the Netherlands, Germany, and Finland.

The sale of flour, although smaller in total volume, had a more scattered distribution. About 39 percent of the flour was sold to China and about 33 percent to the Philippines. The destinations in order of volume were as follows: China, Philippine Islands, Norway, Manchuria, Scotland, Guatemala, Ecuador, Nicaragua, Haiti, Salvador, Cuba, Peru, the Netherlands, Costa Rica, Panama, Honduras, Finland, Mexico, Japan, Denmark, New Zealand, Guam, Tahiti, Saigon, Canary Islands, Egypt, Virgin Islands, Jamaica, Colombia, Venezuela, West Indies, Sumatra, British East Africa, and Mozambique.

The prices at which wheat was bought ranged during most of the marketing year between 70 and 80 cents a bushel. Sales prices of wheat ranged rather widely, but for the most part were around 50 to 52 cents a bushel f. o. b. steamer. The bulk of the flour was sold at prices between \$2.40 and \$2.80 per barrel. The difference between prices paid and prices received was remitted to the members of the association out of funds collected from the wheat-processing tax. It is estimated that not more than \$6,500,000 was spent in this operation. This amounts to an average of a little less than 23 cents a bushel on the wheat handled.

### The Effects of the Export Operation

The operation of the North Pacific Emergency Export Association retarded the movement of distress wheat from the Pacific Northwest into eastern markets. It accounted for about 87 percent of the net exports of wheat including flour from the United States during 1933-34. The operation of the association reduced the spread between Pacific coast prices and prices east of the Rockies. During July, August, and September 1933, before the association was open for business, farm prices in Washington averaged about 15 cents a bushel under the average farm price for the entire United States; from November 1933 to May 1934, while the association was in operation, farm prices in Washington averaged only 12 cents a bushel under the average farm prices for the country as a whole. During July, August, and September 1933, Seattle prices averaged about 21 cents under Chicago futures and during a brief period were as low as 26 cents under Chicago. From November to May the average spread between Chicago and Seattle prices was about 12 cents a bushel and on some days the spread was as low as 6 cents.

The operation of this association was an emergency activity. It offered tremendous relief to producers and other interests in the Pacific Northwest in disposing of the burdensome surpluses of the 1933 crop. It also prevented the low price of that wheat from depressing domestic values in the entire United States. This operation, however, does not represent any fixed, permanent policy on the part of the Administration for disposing of export surpluses but was strictly an emergency measure.

FRANK A. THEIS, *Agricultural Adjustment Administration.*

**W**IND Erosion Can be Controlled by Proper Tillage Operations Soil erosion by wind has been more destructive throughout the Great Plains area during 1933 and 1934 than for any other similar period since the native sod was broken for crop production. Millions of acres are subject to wind erosion, and from hundreds of thousands of acres of level to slightly rolling land the soil was blown as deep as the fields had been tilled the previous year (fig. 74). Fences, Russian-thistles, weeds, shrubs, farm machinery in the fields, farmsteads, windbreaks, roads, or any obstruction that might retard the wind velocity and permit the soil to settle were filled or covered with wind-blown soil.

The principal causes of the disastrous soil blowing in 1933 and 1934 were continuous high winds, intensive cultivation, the practice of burning stubble, low rainfall, and lack of organic matter to hold the



FIGURE 74.—The tilled soil in this field has been nearly all blown away and the subsoil shows the marks of the tillage implements.

soil in place. The loam and light sandy soils are most subject to blowing. Under the same conditions the light sandy soils will usually blow before the heavier loams.

One of the best methods to control soil blowing on continuous-wheat land is to begin immediately after harvest with a lister, one-way disk plow, or duckfoot cultivator. The duckfoot can be used provided the stubble is not too heavy or the soil too dry and hard. These implements cover some of the stubble but leave some uncovered and some only partially covered. The land then will not blow badly and is in good condition to retain sudden heavy rains. The next operation should preferably be made after a few rains have occurred and weed growth has started. The field may be relisted by splitting the ridges, or the ridges may be worked down with a ridge buster, weeder, or other implement capable of leveling the ridges and furrows. This second operation further mixes the soil and stubble.

The land should be kept free of weeds from the time the lister ridges are worked or after the first one-way disk plow, tandem disk, or duckfoot operation until seeding for wheat. The amount of rainfall received usually determines the number of times the soil must be worked to destroy the weed growth. Whatever implement is used, the surface soil should not be worked to a fine dust mulch. A cloddy surface is desired for rainfall absorption and for control of blowing. Such implements as the duckfoot cultivator, spring-tooth harrow, subsoil packer, and rod weeder are much preferred to the one-way disk plow, tandem disk harrow, peg-tooth harrow, clod crusher, or surface roller, for prevention of soil blowing. For seed-bed preparation the proper use of the lister, ridge buster, one-way disk plow, duckfoot, or subsoil packer will usually be found sufficient for small-grain and sorghum crops.

The methods of tillage described above for continuous wheat may be used in the fallow system. Fallow tillage begins early in the



FIGURE 75.—The surface soil is being rapidly blown off this field.

spring, before weed growth starts. The implements and the order of their use are similar to the continuous-wheat methods. The land must be kept in a roughened condition and free of weeds. A roughened cloddy soil surface is more difficult to maintain due to the lack of new stubble and to more tillage operations which tend to pulverize the soil to a fine dust. Listing and relisting by splitting the ridges is one of the best methods to maintain a rough cloddy soil surface and to thoroughly mix the old stubble in the soil. In the winter-wheat area of the Central Plains the field should be allowed to remain in a rough condition until 45 to 60 days before seeding. Then the lister ridges must be worked down, subsoil packed, and field rendered free of weeds, but care must be taken not to produce a fine surface soil by the use of disk or drags.

The greatest danger of soil blowing is during the winter and spring months. Three factors are responsible for this; (1) the weathering of the soil during the winter, (2) high winds, and (3) lack of sufficient plant growth to protect the weathered surface soil. Wind erosion should be checked as soon as it starts. Usually the first sign of soil

blowing is a little dust rising from a small portion of the field. Later the dust will come from a larger area and if control measures are not begun promptly all the field will eventually be blowing (fig. 75).

The best method of checking soil blowing is by roughening the surface in strips at right angles to the prevailing winds (fig. 76). A cultivator or spring-tooth harrow may be used for this purpose. A lister is preferable in light sand or loose, dry loam soils. One to three lister furrows made every 10 rods usually are sufficient but the entire



FIGURE 76.—A field listed in parallel strips to check wind erosion.

field may require listing to stop the soil movement. If the soil is dry and very loose, even listing does not always check the soil movement.

In a clean-tilled field enough clods must be brought to the surface and remain there to prevent the shifting of fine silt and sands. Dry dusty loam and light sandy soils do not have clods near the surface. Rainfall is needed to pack the surface or the lister must penetrate to the moist hard subsoil and lift the clods to the surface.

RAYMOND R. DRAKE, *Bureau of Agricultural Engineering.*

# AGRICULTURAL STATISTICS

*Prepared under the direction of the statistical committee: JOSEPH A. BECKER, chairman, PAUL FROELICH, secretary, S. W. MENDUM, L. D. HOWELL, F. J. HOSKING, and G. W. SPRAGUE.*

The statistical section of this Yearbook brings together what seem from experience to be the most important agricultural statistics of the United States, and of the world so far as the agriculture of this country is concerned. Important historical and geographical series have been given for the more recent years. Most of the data for earlier years, not covered in this Yearbook, will be found in previous issues.

For greater detail on individual commodities, the Statistical Bulletin series may be consulted. Statistical Bulletins 37 to 48, inclusive, have been published during the last 3 years and relate to wheat, corn, cotton, fruits and vegetables, forest products, and cold-storage holdings.

For current statistics to supplement Yearbook statistics, the following sources should be used: (1) Crops and Markets, a monthly publication of the Department carrying the latest current statistics on agriculture in the United States; (2) Foreign Crops and Markets, issued weekly by the Bureau of Agricultural Economics and devoted to current world statistics of crops, livestock, and markets; (3) foreign commodity reports, published by the Bureau of Agricultural Economics and showing the latest world information on single commodities and released when important information is received; (4) the Agricultural Situation, issued monthly; (5) market news reports of the Bureau of Agricultural Economics, issued daily, weekly, monthly, quarterly, or at irregular intervals at Washington or at the principal markets. Requests for these publications may be addressed to Division of Economic Information, Bureau of Agricultural Economics, Washington, D. C.

The crop and livestock reporting service estimates acreage, condition, yield per acre, production, prices paid to producers, and farm value of crops; also numbers, production, prices paid to producers, and value of livestock and livestock products. The organization of this service outside of the Crop Reporting Board and the office force in Washington consists of 40 State field offices, each with an agricultural statistician in charge. There is 1 field office for the New England States, 1 for Maryland and Delaware, 1 for Utah and Nevada, and 1 for Washington and Oregon.

Acreages for the year 1909 are as reported by the Bureau of the Census; acreages in 1919, 1924, and 1929 are based on the census supplemented by State enumerations. In the intercensal years, from 1910 to 1915, estimated acreages were obtained by applying estimated percentages of decrease or increase to the published acreage of the preceding year. The estimates from 1916 to 1918, 1920 to 1923, 1925 to 1928, and 1930 to 1934 are based on acreage changes from year to year as shown by a sample of over 2 percent of the crop acreages in each year, supplemented by State enumerations.

Yields per acre are estimates based on reports of one or more farmers in each agricultural township on the average yield per acre in their localities. For 1929 to 1934, yields for all crops except cotton have been adjusted to be comparable with yields derived from the census figures of 1919, 1924, and 1929. For all crops except cotton and a few minor crops, yields from 1919 to 1928 have been adjusted to be comparable with the census yields of 1919, 1924, and 1929. For these same crops, revisions of acreage have been made for the period 1919 to 1928 essentially to the acreages reported by the censuses of 1920 and 1930. For cotton, both acreage and yield have been revised to the basis of the 1930 census. Production is acreage times the yield-per-acre figure. Linters are not included in cotton figures, unless so stated in the respective tables.

In this Yearbook are shown for the first time historical revisions prior to 1919, by which the currently published estimates have been made consistent with the decennial census figures, supplemented by State enumerations. These historical revisions are limited at present to the first tables, or master tables, under wheat, corn, oats, and cotton. For other important crops, revised data will be published in future issues.

Estimates of farm stocks, sales, quality, crop condition, and miscellaneous information concerning crops are based either upon sample data or upon estimates of crop reporters for their localities.

The term "commercial" is used in connection with certain crop estimates to distinguish some part of the total production of a crop. Except for indicating that the entire production is not represented in the estimate, "commercial" does not have the same meaning in each instance where used. The commercial apple-crop estimate, for example, represents that portion of the total apple crop which is sold or available for sale for consumption as fresh fruit. That portion of the crop which is used for cider, vinegar, canning, evaporating, or other manufacture is not included in the commercial crop as defined in this case. The commercial orange and grapefruit crops in Florida represent the portion shipped or to be shipped out of the State by rail, boat, or autotruck, as differentiated from the portion canned, made into juice, sold or consumed locally, wasted, etc.

Estimates of commercial truck-crop production are concerned only with those areas growing crops primarily to supply the large consuming markets more or less distant from the producing center. Production in home and market gardens, intended primarily for local sale, is excluded. Similarly with truck crops grown for commercial canning or manufacture, the estimates include only quantities grown for use by canning or packing establishments and exclude quantities canned in the home. For the commercial acreages in the areas concerned, the truck-crop estimates are intended to include the total production suitable for food marketing purposes (unless destroyed by natural cause before harvest), whether or not the entire crop finds a market or use. It is, therefore, customary practice to retain in these production estimates those quantities of produce which ordinarily would be marketable but which are left unharvested because of adverse marketing conditions. The canning-crop estimates represent the total quantity of raw product used by packers or canners for manufacturing purposes, including cold-packing.

Monthly prices received by producers on the specified dates are based on reports from special price reporters on the average price paid to farmers for all grades and qualities of a specific commodity. These men are mostly country buyers of or dealers in agricultural products.

Farm values of crops as shown are computed mostly by applying to total production the December 1 price paid to producers. These prices are reported by the crop reporters, who are farmers. The average price received for the portion of the crop sold may be greater or less than this price, depending on the prices previous and subsequent to December 1 and the amount of the crop sold at the different prices. For the years 1919 to 1934, weighted average prices for the crop-marketing season and farm values based on these weighted prices have displaced the December 1 prices and values for many crops.

For commercial truck crops and canning crops, and for certain fruit crops, the prices shown are the estimated season averages of the prices received by producers at the shipping point, including the cost of the container where this is a customary requirement of delivery. The December 1 price has been employed in computing farm values only in the case of certain miscellaneous crops of minor importance, where neither weighted averages of monthly prices nor estimates of average prices for the entire marketing season are available.

The index numbers of prices received by producers (farm prices) were revised in 1934. This revision was begun in 1931 to utilize the results of the 1930 census and additional data provided by the crop-estimating service for making index numbers of farm prices more representative of the actual changes in the prices of all farm products. The principal changes are: (1) the use of improved price series for dairy products and tobacco; (2) the addition of the prices of 20 products, including a group of truck crops; (3) shifting the weights from the marketings of the 1918-23 period to those of the 1924-29 period; and (4) index numbers for each group of commodities are weighted in proportion to that group's contribution to total cash farm income, whereas formerly the combined index of farm prices was computed from the weighted aggregate value of the 27 commodities used in the earlier series.

Numbers of livestock on farms on January 1, 1920 and 1925, are based on the census enumerations as of those dates, supplemented by enumerations by

State agencies, such as assessors' and brand-inspection boards, and by records of shipments during 1920 and 1925. Numbers on January 1, 1930, give weight insofar as feasible to the numbers reported by the census of 1930 which was as of April 1, with allowance for indicated changes between January 1 and April 1. In the intercensal years, from 1911 to 1919, the numbers of livestock were obtained by methods similar to those used for crop acreages. Estimates from 1921 to 1924, from 1926 to 1929, and from 1931 to 1935 are based on a sample of over 2 percent, supplemented by trends derived from assessors' enumerations, reports of brand-inspection boards, market movements, and stockyard receipts. The census bases are not always comparable from one decade to another, because of changes of dates and classifications.

The average value per head on January 1 is estimated from reports of correspondents relating to livestock in their vicinity. These tend to reflect inventory values as distinguished from the monthly prices which relate to sales. The farm value on January 1 is computed by applying the average value per head to the number on farms.

The Federal market news service supplies much of the information on market prices and movements. The leased-wire telegraph system in use by this service extends from the Atlantic to the Pacific Ocean and reaches most of the important markets. At each of the branch offices commodity specialists gather information regarding supply, market demand, and prices of the products on which they report. They observe sales actually made on the markets and are constantly in touch with the traders, who in many instances give them access to their office records in order that they may have specific information on which to base their reports. Car-lot shipments and market receipts of crops and livestock products are reported by officials and agents of railroads, express companies, and boat lines, or are compiled from trade publications. Shipments to market by motor truck have continued important, and at a few of the markets receipts by truck are reported by dealers and distributors. Data on receipts, slaughter, and shipments of livestock are obtained from monthly reports submitted by the public stockyards. Data on cold-storage stocks are obtained directly from all important cold-storage warehouses, and data on commercial stocks of grain are reported by boards of trade, etc. Leaf-tobacco stocks are reported directly by dealers and manufacturers.

Where a weighting factor is available, market prices as shown are weighted averages. But in many cases a weighting factor is not available, and the prices shown are usually the means of ranges of quotations without reference to quantity.

Prices derived from different sources may not be strictly comparable, although for most purposes they are satisfactory. Data as to commercial stocks and movements of various commodities are as nearly complete as practicable and are considered fairly representative.

The tables of international trade cover substantially the international trade of the world. The total imports and total exports in any one year cannot be expected to balance, although disagreements tend to be compensated over a series of years. Among the sources of disagreement are: The different periods covered by the year of various countries; imports received in the year subsequent to the year of export; lack of uniformity in classification of goods as among countries; different trade practices and varying degrees of failure in recording countries of origin and ultimate destinations; different practices in recording reexported goods, and different methods of treating free ports. Exports given are domestic exports and the imports given are imports for consumption whenever it is possible to distinguish such imports from general imports, that is, "special" or net, instead of general. General imports are all the imports reported. In foreign countries "special" trade is imports for consumption, or net imports, or imports less re-exports. In the United States imports for consumption are those entered for actual consumption and include withdrawals from bonded warehouses for consumption. "Special" or net figures are used in the international trade tables for the following countries: Belgium, Denmark, Egypt, Irish Free State, China, Netherlands Indies, France, and the United Kingdom. In the United States trade tables and wherever United States figures are used, they are domestic exports and general imports unless otherwise specified. While there are some inevitable omissions, there may be some duplications because of reshipments which do not appear as such in the official reports. In the trade tables, figures for United States include Alaska, Puerto Rico, and Hawaii, but do not include the Philippine Islands or the Virgin Islands of United States.

Statistics of acreage and production in foreign countries are compiled as far as possible from official sources and are, therefore, subject to whatever errors may



result from shortcomings in the reporting and statistical services of the various countries. Inaccuracies also result from differences in nomenclature and classification in foreign countries. Except where otherwise stated, pre-war data refer to pre-war boundaries. Yields per acre are calculated from acreage and production, both rounded to thousand units, and are therefore subject to a greater possibility of error when calculated for countries with small acreage.

Agricultural Adjustment Administration work got under way about the middle of 1933. This Yearbook contains 10 summary tables, indicating in a general way some of the results of that work. These tables comprise the last pages in the section on Farm Business and Related Statistics.

Prices prevailing in 1933, 1934, and 1935 are stated in terms of United States currency, unless otherwise specified. For the convenience of those wishing to convert currency prices to gold prices, a table of the gold value of the dollar, weekly from April 1933 to March 1935, will be found as the last table in this Yearbook.

As an aid to the comprehension and use of these statistics, the following table of weights, measures, and conversion factors will be useful. It represents the important basic figures, used in the Yearbook:

*Weights, measures, and conversion factors used in the Yearbook of Agriculture*

| Commodity                    | Unit <sup>1</sup> | Net weight in pounds | Commodity                 | Unit <sup>1</sup> | Net weight in pounds |
|------------------------------|-------------------|----------------------|---------------------------|-------------------|----------------------|
| Alfalfa seed.....            | Bushel.....       | 60                   | Hempseed.....             | Bushel.....       | 44                   |
| Apricots.....                | do.....           | 48                   | Lemons.....               | Box.....          | 76                   |
| Barley.....                  | do.....           | 48                   | Milk.....                 | Gallon.....       | 8.6                  |
| Beans, dry.....              | do.....           | 60                   | Oats.....                 | Bushel.....       | 32                   |
| Do.....                      | Bag.....          | 100                  | Oranges (Florida).....    | Box.....          | 90                   |
| Buckwheat.....               | Bushel.....       | 48                   | Oranges (California)..... | do.....           | 70                   |
| Clover seed.....             | do.....           | 60                   | Orchard grass.....        | Bushel.....       | 14                   |
| Corn, ear, husked.....       | do.....           | 2 70                 | Peanut oil.....           | Gallon.....       | 7.5                  |
| Corn, shelled.....           | do.....           | 56                   | Potatoes.....             | Bushel.....       | 60                   |
| Cotton, ginned.....          | Bale.....         | 3 500<br>4 478       | Repeased.....             | do.....           | 50                   |
| Cottonseed.....              | Bushel.....       | 32                   | Rice, rough.....          | do.....           | 45                   |
| Cottonseed oil.....          | Gallon.....       | 7.5                  | Rice, milled.....         | Pocket.....       | 100                  |
| Cranberries.....             | Barrel.....       | 106                  | Rye.....                  | Bushel.....       | 56                   |
| Flaxseed.....                | Bushel.....       | 56                   | Soybean oil.....          | Gallon.....       | 7.5                  |
| Flaxseed, various.....       | Barrel.....       | 196                  | Spelt.....                | Bushel.....       | 40                   |
| Flour, various.....          | Bushel.....       | 56                   | Timothy seed.....         | do.....           | 45                   |
| Grain sorghums.....          | do.....           | 56                   | Tomatoes.....             | do.....           | 53                   |
| Grapefruit (Florida).....    | Box.....          | 80                   | Wheat.....                | do.....           | 60                   |
| Grapefruit (California)..... | do.....           | 60                   | Various commodities.....  | Short ton.....    | 2,000                |

| Commodity                 | Unit                       | Equivalent to—  |
|---------------------------|----------------------------|---|
| Almonds.....              | 1 pound shelled.....       | About 3½ pounds unshelled.  |
| Apples.....               | 1 pound dried.....         | About 7 pounds fresh.   |
| Do.....                   | 1 barrel.....              | 3 boxes or 3 bushel baskets.  |
| Barley flour.....         | 1 barrel (196 pounds)..... | About 9 bushels of barley.  |
| Buckwheat flour.....      | do.....                    | About 7 bushels of buckwheat.                                       |
| Filberts.....             | 1 pound shelled.....       | About 2.22 pounds unshelled.  |
| Malt.....                 | 1 bushels.....             | About 1 bushel of barley.   |
| Oatmeal.....              | 1 barrel (196 pounds)..... | About 10½ bushels of oats.  |
| Peaches (California)..... | 1 pound dried.....         | About 5½ pounds fresh.  |
| Peanuts.....              | 1 pound shelled.....       | About 1½ pounds unshelled.  |
| Prunes.....               | 1 pound dried.....         | About 2½ pounds fresh in California; 3 to 4 pounds in other States. |
| Raisins.....              | 1 pound.....               | About 4 pounds of fresh grapes.                                     |
| Rice.....                 | 1 pound milled.....        | About 1.62 pounds of rough rice.                                    |
| Rye flour.....            | 1 barrel (196 pounds)..... | About 6 bushels of rye.   |
| Walnuts, English.....     | 1 pound shelled.....       | About 2.38 pounds unshelled.  |
| Wheat flour.....          | 1 barrel (196 pounds)..... | About 4.7 bushels of wheat. <sup>5</sup>                            |

<sup>1</sup> Standard bushel used in the United States contains 2,150.42 cubic inches; the gallon, 231 cubic inches.

<sup>2</sup> The standard weight of 70 pounds is usually recognized as being about 2 measured bushels of husked corn on the ear, as it requires 70 pounds to yield 1 bushel, or 56 pounds, of shelled corn.

<sup>3</sup> Gross.

<sup>4</sup> For statistical purposes the bale of cotton is 500 pounds gross or 478 pounds net weight. Actual bale weights vary from year to year and the customary average weights of bales of foreign growths differ from that of the American square bale.

<sup>5</sup> This figure has been used for conversions relating to the period 1921-34. Because of changes in milling processes the following factors have been used for earlier periods: 1870-1879, 5 bushels; 1880-1908, 4.75 bushels; 1909-17, 4.7 bushels; 1918 and 1919, 4.5 bushels; 1920, 4.6 bushels.

# STATISTICS OF GRAINS

TABLE 1.—Wheat: Acreage, production, value, and foreign trade, United States, 1866-1934

| Year | Acreage harvested | Average yield per acre | Production    | Price per bushel received by producers Dec. 1 <sup>1</sup> | Farm value, basis Dec. 1 price | Wheat per bushel at Chicago, 1866-67 to 1899-99, spring wheat, to date, No. 2 Hard Winter, year beginning July 1 <sup>2</sup> | Wheat per bushel at Minneapolis, 1899-1900 to 1917-18, No. 1 Northern spring, and 1918-19 to date, No. 1 Dark Northern spring, year beginning July 1 <sup>2</sup> | Foreign trade, including flour, year beginning July <sup>4</sup> |                      |                          |                          |
|------|-------------------|------------------------|---------------|--|--------------------------------|---|---|--|----------------------|--------------------------|--------------------------|
|      |                   |                        |               |  |                                |   |   | Domestic exports <sup>5</sup>                                    | Imports <sup>6</sup> | Net exports <sup>7</sup> |                          |
|      |                   |                        |               |  |                                |   |   |  |                      | Total                    | Percentage of production |
|      | 1,000 acres       | Bushels                | 1,000 bushels | Cents  | 1,000 dollars                  | Cents   | Cents   | 1,000 bushels  | 1,000 bushels        | 1,000 bushels            | Per cent                 |
| 1866 | 15,408            | 11.0                   | 169,793       | —  | —                              | 189   | —   | 12,647   | 3,062                | 10,585                   | 6.4                      |
| 1867 | 16,738            | 12.6                   | 210,878       | —  | —                              | 189   | —   | 28,323   | 2,014                | 24,550                   | 11.6                     |
| 1868 | 19,140            | 12.9                   | 246,272       | —  | —                              | 128   | —   | 29,717   | 1,830                | 28,314                   | 11.5                     |
| 1869 | —                 | —                      | —             | —  | —                              | —   | —   | —  | —                    | —                        | —                        |
| 1869 | 21,194            | 13.7                   | 289,526       | —  | —                              | 99  | —   | 53,901   | 1,236                | 53,126                   | 18.3                     |
| 1870 | 20,945            | 12.1                   | 254,429       | —  | —                              | 115   | —   | 52,574   | 867                  | 52,195                   | 20.5                     |
| 1871 | 22,230            | 12.2                   | 271,881       | —  | —                              | 124   | —   | 38,996   | 2,411                | 37,587                   | 13.8                     |
| 1872 | 22,962            | 11.8                   | 271,482       | —  | —                              | 121   | —   | 52,015   | 1,841                | 50,705                   | 18.7                     |
| 1873 | 24,866            | 12.9                   | 321,931       | —  | —                              | 116   | —   | 91,510   | 2,117                | 90,418                   | 28.1                     |
| 1874 | 27,310            | 13.0                   | 356,115       | —  | —                              | 95  | —   | 72,913   | 368                  | 72,845                   | 20.5                     |
| 1875 | 28,382            | 11.1                   | 313,728       | —  | —                              | 106   | —   | 74,751   | 1,664                | 74,508                   | 23.7                     |
| 1876 | 28,283            | 10.9                   | 309,116       | —  | —                              | 122   | —   | 57,044   | 366                  | 57,148                   | 18.5                     |
| 1877 | 27,963            | 14.1                   | 395,510       | —  | —                              | 111   | —   | 92,142   | 1,391                | 92,028                   | 23.3                     |
| 1878 | 33,379            | 13.5                   | 449,175       | —  | —                              | 90  | —   | 150,503  | 2,074                | 150,253                  | 33.5                     |
| 1879 | 55,450            | 13.0                   | 720,483       | —  | —                              | —   | —   | —  | —                    | —                        | —                        |
| 1879 | 35,347            | 13.0                   | 459,234       | —  | —                              | 110   | —   | 181,807  | 487                  | 181,951                  | 39.6                     |
| 1880 | 38,096            | 13.2                   | 502,257       | —  | —                              | 99  | —   | 188,308  | 212                  | 188,250                  | 37.5                     |
| 1881 | 36,795            | 11.0                   | 405,886       | —  | —                              | 129   | —   | 128,371  | 867                  | 123,211                  | 30.4                     |
| 1882 | 36,496            | 15.1                   | 552,207       | —  | —                              | 105   | —   | 150,113  | 1,068                | 150,000                  | 27.2                     |
| 1883 | 35,587            | 12.3                   | 438,782       | —  | —                              | 93  | —   | 113,822  | 53                   | 113,892                  | 26.0                     |
| 1884 | 38,425            | 14.8                   | 571,292       | —  | —                              | 80  | —   | 135,232  | 213                  | 135,501                  | 23.7                     |
| 1885 | 35,095            | 11.4                   | 399,931       | —  | —                              | 81  | —   | 96,611   | 389                  | 96,568                   | 24.1                     |
| 1886 | 36,512            | 14.1                   | 513,840       | —  | —                              | 77  | —   | 156,685  | 283                  | 156,780                  | 30.5                     |
| 1887 | 36,573            | 13.5                   | 490,761       | —  | —                              | 75  | —   | 122,618  | 598                  | 122,524                  | 25.0                     |
| 1888 | 34,969            | 12.1                   | 423,867       | —  | —                              | 95  | —   | 90,644   | 136                  | 91,030                   | 21.5                     |
| 1889 | 38,580            | 13.0                   | 501,374       | —  | —                              | —   | —   | —  | —                    | —                        | —                        |
| 1889 | 36,008            | 14.0                   | 504,370       | —  | —                              | 81  | —   | 112,488  | 163                  | 112,507                  | 22.3                     |
| 1890 | 36,656            | 12.2                   | 449,042       | —  | —                              | 97  | —   | 109,017  | 569                  | 109,054                  | 24.3                     |
| 1891 | 41,090            | 16.5                   | 677,543       | —  | —                              | 89  | —   | 229,465  | 2,463                | 228,841                  | 32.8                     |
| 1892 | 42,979            | 14.2                   | 611,854       | —  | —                              | 73  | —   | 196,068  | 968                  | 195,672                  | 32.0                     |
| 1893 | 40,790            | 12.4                   | 505,795       | —  | —                              | 60  | —   | 168,498  | 1,183                | 167,531                  | 33.1                     |
| 1894 | 40,167            | 13.5                   | 541,873       | —  | —                              | 57  | —   | 148,630  | 1,439                | 147,740                  | 27.3                     |
| 1895 | 38,968            | 13.9                   | 542,119       | —  | —                              | 61  | —   | 130,099  | 2,117                | 130,345                  | 24.0                     |
| 1896 | 40,828            | 12.8                   | 522,963       | —  | —                              | 70  | —   | 148,767  | 1,545                | 148,725                  | 28.4                     |
| 1897 | 43,413            | 14.0                   | 606,202       | —  | —                              | 91  | —   | 221,143  | 2,060                | 220,965                  | 36.5                     |
| 1898 | 50,506            | 15.2                   | 768,148       | —  | —                              | 71  | —   | 227,240  | 1,875                | 227,300                  | 29.6                     |
| 1899 | 52,589            | 12.5                   | 658,534       | —  | —                              | —   | —   | —  | —                    | —                        | —                        |
| 1899 | 52,342            | 12.5                   | 655,143       | —  | —                              | 68  | —   | 190,772  | 320                  | 190,749                  | 29.1                     |
| 1900 | 49,203            | 12.2                   | 598,315       | —  | —                              | 72  | —   | 220,653  | 603                  | 220,723                  | 36.8                     |
| 1901 | 40,847            | 15.0                   | 762,546       | —  | —                              | 71  | —   | 239,212  | 121                  | 239,157                  | 31.4                     |
| 1902 | 46,244            | 14.9                   | 686,939       | —  | —                              | 73  | —   | 207,635  | 1,080                | 205,016                  | 30.3                     |
| 1903 | 43,456            | 13.7                   | 593,118       | —  | —                              | 81  | —   | 124,977  | 229                  | 124,999                  | 18.8                     |
| 1904 | 43,155            | 12.9                   | 555,871       | —  | —                              | 101   | —   | 46,319   | 3,296                | 43,612                   | 7.8                      |
| 1905 | 46,306            | 15.2                   | 706,026       | —  | —                              | 86  | —   | 101,069  | 273                  | 100,949                  | 14.3                     |
| 1906 | 46,230            | 16.0                   | 740,509       | —  | —                              | 76  | —   | 150,567  | 602                  | 150,384                  | 20.3                     |
| 1907 | 44,139            | 14.2                   | 628,794       | —  | —                              | 96  | —   | 166,536  | 590                  | 166,304                  | 26.4                     |

See footnotes at end of table.

TABLE 1.—Wheat: Acreage, production, value, and foreign trade, United States, 1866-1934—Continued

| Year      | Acreage harvested | Average yield per acre | Production    | Price per bushel received by producers Dec. 1 <sup>1</sup> | Farm value, basis Dec. 1 price | Wheat per bushel at Chicago, 1866-67 to 1898-99, spring wheat, 1899-1900 to date, No. 2 Hard Winter, year beginning July 1 <sup>2</sup> | Wheat per bushel at Minneapolis, 1899-1900 to 1917-18, No. 1 Northern spring, and 1918-19 to date, No. 1 Dark Northern spring, year beginning July 1 <sup>3</sup> | Foreign trade, including flour, year beginning July <sup>4</sup> |                      |                          |                          |
|-----------|-------------------|------------------------|---------------|--|--------------------------------|---|---|--|----------------------|--------------------------|--------------------------|
|           |                   |                        |               |  |                                |   |   | Domestic exports <sup>4</sup>                                    | Imports <sup>5</sup> | Net exports <sup>7</sup> |                          |
|           |                   |                        |               |  |                                |   |   |  |                      | Total                    | Percentage of production |
|           | 1,000 acres       | Bushels                | 1,000 bushels | Cents  | 1,000 dollars                  | Cents   | Cents   | 1,000 bushels  | 1,000 bushels        | 1,000 bushels            | Percent                  |
| 1908..... | 45,102            | 14.3                   | 642,818       | 100  | 111                            | 109   | 89,173  | 845  | 88,465               | 12.9                     |                          |
| 1909..... | 44,265            | 15.4                   | 683,376       | 109  | 105                            | 107   | 71,338  | 1,175  | 70,164               | 11.2                     |                          |
| 1910..... | 44,262            | 15.5                   | 683,927       | 94   | 107                            | 87  | 81,891  | 3,445  | 78,447               | 12.7                     |                          |
| 1911..... | 45,793            | 13.7                   | 625,476       | 94   | 87                             | 88  | 145,159   | 1,304  | 143,938              | 19.7                     |                          |
| 1912..... | 49,894            | 12.4                   | 618,166       | 89   | 147                            | 120   | 95,525  | 2,402  | 116,300              | 19.5                     |                          |
| 1913..... | 48,413            | 15.1                   | 730,011       | 111  | 120                            | 109   | 335,702   | 728  | 335,162              | 37.3                     |                          |
| 1914..... | 52,012            | 14.4                   | 751,101       | 114  | 109                            | 246,221   | 7,254   | 239,591  | 23.8                 |                          |                          |
| 1915..... | 55,613            | 16.1                   | 897,487       | 187  | 220                            | 205,962   | 24,960  | 181,067  | 28.5                 |                          |                          |
| 1916..... | 60,303            | 16.7                   | 1,008,637     | 228  | 220                            | 132,579   | 31,215  | 102,775  | 16.6                 |                          |                          |
| 1917..... | 61,068            | 14.8                   | 904,130       | 224  | 236                            | 287,402   | 11,289  | 276,615  | 30.6                 |                          |                          |
| 1918..... | 73,099            | 12.9                   | 952,097       | 216.3  | 2,059,421                      | 237   | 222,030   | 5,511  | 216,671              | 22.8                     |                          |
| 1919..... | 73,700            | 13.5                   | 843,277       | 132.6  | 1,539,584                      | 216   | 369,313   | 67,682   | 312,625              | 37.1                     |                          |
| 1920..... | 62,358            | 12.7                   | 818,964       | 103.0  | 843,458                        | 128   | 282,566   | 17,375   | 265,590              | 32.4                     |                          |
| 1921..... | 64,586            | 13.8                   | 846,049       | 96.6   | 817,929                        | 113   | 224,900   | 20,031   | 205,079              | 24.2                     |                          |
| 1922..... | 61,897            | 13.3                   | 759,482       | 92.6   | 703,283                        | 106   | 159,880   | 23,079   | 131,892              | 17.4                     |                          |
| 1923..... | 56,920            | 15.7                   | 890,877       | 124.7  | 1,047,708                      | 139   | 200,803   | 6,201  | 254,695              | 30.3                     |                          |
| 1924..... | 50,822            | 12.3                   | 609,142       | 143.7  | 961,801                        | 161   | 105,023   | 15,679   | 92,069               | 13.3                     |                          |
| 1925..... | 52,441            | 14.7                   | 833,544       | 121.7  | 1,014,623                      | 140   | 219,160   | 13,264   | 205,994              | 24.7                     |                          |
| 1926..... | 56,515            | 14.7                   | 874,733       | 119.0  | 1,041,209                      | 138   | 206,259   | 15,734   | 190,578              | 21.8                     |                          |
| 1927..... | 59,628            | 15.4                   | 912,981       | 99.8   | 911,065                        | 117   | 163,687   | 21,442   | 142,301              | 15.6                     |                          |
| 1928..... | 59,226            | 12.9                   | 809,649       | 103.4  | 850,308                        | 130   | 153,245   | 12,956   | 140,361              | 17.1                     |                          |
| 1929..... | 63,320            | 14.2                   | 899,702       | 67.0   | 596,096                        | 84  | 131,475   | 19,059   | 112,435              | 12.6                     |                          |
| 1930..... | 62,661            | 16.3                   | 932,221       | 39.0   | 363,727                        | 58  | 71  | 135,797  | 12,886               | 123,774                  | 13.3                     |
| 1931..... | 57,114            | 13.1                   | 745,788       | 37.9   | 282,808                        | 53  | 61  | 41,211   | 9,382                | 32,285                   | 4.3                      |
| 1932..... | 47,910            | 11.0                   | 528,975       | 74.1   | 391,778                        | 94  | 91  | 37,091   | 11,494               | 25,507                   | 4.8                      |
| 1933..... | 42,235            | 11.8                   | 496,469       | 88.0   | 436,872                        |   |   |  |                      |                          |                          |

<sup>1</sup> Calculations of average price and farm value not completed. Beginning with 1919 prices are weighted average prices for crop marketing season.

<sup>2</sup> 1866-67 to 1884-85, No. 2 spring—simple average of mean of weekly high and low cash prices, as quoted in annual reports of the Chicago Board of Trade; 1885-86 to December 1896, No. 2 spring—simple average of mean of daily high and low cash prices, as quoted in Bartel's Red Book (summary of current quotations in Chicago Daily Trade Bulletin); January 1897-June 1898, No. 3 spring and 1898-99, No. 1 spring—simple average of mean of daily high and low cash prices as quoted in Chicago Daily Trade Bulletin; 1899-1900 to date, No. 2, Hard Winter computed by weighting selling prices by number of car lots sold, as reported in the Chicago Daily Trade Bulletin.

<sup>3</sup> 1899-1900 to 1917-18, No. 1 Northern spring and 1918-19 to date No. 1 Dark Northern spring, computed by weighting selling prices by number of car lots sold as reported in the Minneapolis Daily Market Record.

<sup>4</sup> Compiled from Commerce and Navigation of the United States, 1866-1917; Foreign Commerce and Navigation of the United States, 1918; Monthly Summary of Foreign Commerce of the United States, June issues, 1919-26; January and June issues, 1927-34. Wheat flour converted to terms of grain on the following basis: 1866-79, 5; 1880-1908, 4.75; 1909-17, 4.7; 1918 and 1919, 4.5; 1920, 4.6; 1921-34, 4.7 bushels of grain per barrel of flour.

<sup>5</sup> Includes flour milled from imported wheat.

<sup>6</sup> Includes wheat imported for milling in bond and export.

<sup>7</sup> Total exports (domestic plus foreign) minus total imports; beginning 1933-34 net figures are domestic exports minus imports for consumption. (See introductory text.)

<sup>8</sup> Preliminary.

Bureau of Agricultural Economics.

Production figures are estimates of the Crop Reporting Board, revised. See introductory text. Italic figures are census returns.

TABLE 2.—Wheat, winter, durum, and other spring: Acreage seeded and harvested, and production, United States, 1909-34

| Year                    | Winter wheat                     |                   |                        |               | Durum wheat <sup>1</sup> |                   |                        |               | Other spring wheat |                   |                        |               |
|-------------------------|----------------------------------|-------------------|------------------------|---------------|--------------------------|-------------------|------------------------|---------------|--------------------|-------------------|------------------------|---------------|
|                         | Acreage seeded in preceding fall | Acreage harvested | Average yield per acre | Production    | Acreage seeded           | Acreage harvested | Average yield per acre | Production    | Acreage seeded     | Acreage harvested | Average yield per acre | Production    |
|                         | 1,000 acres                      | 1,000 acres       | Bushels                | 1,000 bushels | 1,000 acres              | 1,000 acres       | Bushels                | 1,000 bushels | 1,000 acres        | 1,000 acres       | Bushels                | 1,000 bushels |
| 1909.....               | 29,196                           | 27,018            | 15.5                   | 417,796       |                          |                   |                        |               |                    |                   |                        |               |
| 1910.....               | 32,878                           | 28,152            | 15.3                   | 429,875       |                          |                   |                        |               |                    |                   |                        |               |
| 1911.....               | 33,514                           | 29,780            | 14.4                   | 428,740       |                          |                   |                        |               |                    |                   |                        |               |
| 1912.....               | 35,709                           | 28,406            | 14.2                   | 402,703       |                          |                   |                        |               |                    |                   |                        |               |
| 1913.....               | 33,608                           | 31,962            | 15.7                   | 501,239       |                          |                   |                        |               |                    |                   |                        |               |
| 1914.....               | 37,372                           | 36,203            | 18.5                   | 670,945       |                          |                   |                        |               |                    |                   |                        |               |
| 1915.....               | 40,657                           | 39,597            | 18.2                   | 640,565       |                          |                   |                        |               |                    |                   |                        |               |
| 1916.....               | 38,873                           | 34,078            | 13.4                   | 456,118       |                          |                   |                        |               |                    |                   |                        |               |
| 1917.....               | 37,981                           | 26,825            | 14.5                   | 389,956       |                          |                   |                        |               |                    |                   |                        |               |
| 1918.....               | 43,399                           | 37,171            | 15.0                   | 556,506       |                          |                   |                        |               |                    |                   |                        |               |
| 1919.....               | 51,391                           | 50,404            | 14.8                   | 748,480       | (?)                      | 3,893             | 7.3                    | 28,324        | 26,049             | 19,403            | 9.0                    | 175,313       |
| 1920.....               | 45,505                           | 40,409            | 15.2                   | 613,227       | (?)                      | 4,400             | 9.9                    | 43,550        | 22,472             | 17,549            | 10.6                   | 186,500       |
| 1921.....               | 45,479                           | 43,160            | 14.0                   | 602,793       | (?)                      | 6,009             | 9.0                    | 54,212        | 22,202             | 15,897            | 10.5                   | 161,959       |
| 1922.....               | 47,415                           | 41,649            | 13.7                   | 571,459       | (?)                      | 5,659             | 14.5                   | 82,245        | 19,748             | 14,089            | 13.7                   | 192,945       |
| 1923.....               | 45,408                           | 38,712            | 14.3                   | 555,299       | (?)                      | 4,064             | 9.6                    | 38,961        | 19,102             | 14,144            | 11.7                   | 165,222       |
| 1924.....               | 38,635                           | 35,415            | 12.1                   | 431,558       | (?)                      | 3,674             | 16.1                   | 59,114        | 17,068             | 13,371            | 15.7                   | 209,419       |
| 1925.....               | 40,920                           | 31,862            | 16.0                   | 501,116       | (?)                      | 4,168             | 14.0                   | 58,010        | 20,816             | 16,321            | 12.9                   | 210,016       |
| 1926.....               | 40,603                           | 37,596            | 16.8                   | 631,830       | 4,832                    | 4,577             | 9.3                    | 42,449        | 15,483             | 14,842            | 10.9                   | 159,128       |
| 1927.....               | 44,134                           | 38,195            | 14.3                   | 547,666       | 5,478                    | 5,445             | 14.4                   | 75,859        | 16,037             | 15,938            | 15.6                   | 248,708       |
| 1928.....               | 48,431                           | 36,853            | 15.7                   | 577,417       | 6,834                    | 6,804             | 14.1                   | 95,802        | 15,822             | 15,569            | 15.4                   | 239,742       |
| 1929.....               | 43,918                           | 41,188            | 14.2                   | 586,055       | 5,772                    | 5,571             | 9.6                    | 54,710        | 17,097             | 16,561            | 11.0                   | 181,415       |
| 1930.....               | 44,071                           | 40,633            | 15.4                   | 631,205       | 4,836                    | 4,745             | 12.2                   | 57,719        | 17,427             | 16,983            | 11.8                   | 200,778       |
| 1931.....               | 45,240                           | 43,080            | 19.0                   | 817,962       | 4,093                    | 2,960             | 7.0                    | 20,712        | 16,285             | 11,063            | 8.5                    | 93,547        |
| 1932.....               | 42,283                           | 35,216            | 13.6                   | 478,291       | 4,187                    | 3,946             | 10.3                   | 40,600        | 18,457             | 17,952            | 12.6                   | 228,897       |
| 1933.....               | 42,669                           | 28,485            | 12.3                   | 350,792       | 3,140                    | 2,310             | 7.2                    | 16,737        | 21,160             | 17,115            | 9.4                    | 161,446       |
| 1934 <sup>4</sup> ..... | 41,850                           | 32,945            | 12.3                   | 405,034       | 2,046                    | 990               | 7.2                    | 7,086         | 16,475             | 8,300             | 10.2                   | 84,249        |

From 1909 to 1918 the only available data represent "all spring wheat," no segregation being made between "durum" and "other spring."

<sup>1</sup> Figures on durum apply to 4 States only—Minnesota, North Dakota, South Dakota, and Montana.

<sup>2</sup> Included in "All spring wheat"; see footnote 3.

<sup>3</sup> All spring wheat.

<sup>4</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board, revised. See introductory text.

TABLE 3.—Wheat, durum and other spring: Acreage seeded, by States, average 1927-31, and annual 1932-34

| State                            | Durum            |             |             |                   | Other spring     |             |             |                   |
|----------------------------------|------------------|-------------|-------------|-------------------|------------------|-------------|-------------|-------------------|
|                                  | Average, 1927-31 | 1932        | 1933        | 1934 <sup>1</sup> | Average, 1927-31 | 1932        | 1933        | 1934 <sup>1</sup> |
|                                  | 1,000 acres      | 1,000 acres | 1,000 acres | 1,000 acres       | 1,000 acres      | 1,000 acres | 1,000 acres | 1,000 acres       |
| Illinois.....                    |                  |             |             |                   | 140              | 89          | 59          | 37                |
| Minnesota.....                   | 231              | 110         | 90          | 63                | 1,076            | 1,182       | 1,433       | 1,388             |
| North Dakota.....                | 3,326            | 3,072       | 2,878       | 1,552             | 6,630            | 7,523       | 8,994       | 7,205             |
| South Dakota.....                | 1,326            | 962         | 630         | 400               | 2,227            | 2,534       | 3,440       | 2,560             |
| Nebraska.....                    |                  |             |             |                   | 172              | 202         | 414         | 268               |
| Montana.....                     | 30               | 43          | 42          | 31                | 3,586            | 3,709       | 3,257       | 2,704             |
| Wyoming.....                     |                  |             |             |                   | 192              | 143         | 196         | 80                |
| Colorado.....                    |                  |             |             |                   | 343              | 302         | 368         | 350               |
| New Mexico.....                  |                  |             |             |                   | 30               | 31          | 25          | 21                |
| Utah.....                        |                  |             |             |                   | 75               | 76          | 74          | 70                |
| Nevada.....                      |                  |             |             |                   | 11               | 17          | 15          | 13                |
| United States <sup>2</sup> ..... | 5,413            | 4,187       | 3,140       | 2,046             | 16,534           | 18,457      | 21,160      | 16,475            |

<sup>1</sup> Preliminary.

<sup>2</sup> For other States than those in this table, harvested acreage and seeded acreage are the same.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 4.—*Wheat, winter: Acreage seeded and percentage of acreage abandoned, by States, averages, and annual 1932-34*

| State and division  | Acreage seeded in autumn of— |                    |                    |                    | Percentage abandoned <sup>1</sup> |                |                |                   |
|---------------------|------------------------------|--------------------|--------------------|--------------------|-----------------------------------|----------------|----------------|-------------------|
|                     | Average,<br>1927-31          | 1932               | 1933               | 1934 <sup>2</sup>  | Average,<br>1922-31               | 1932           | 1933           | 1934 <sup>2</sup> |
|                     | <i>1,000 acres</i>           | <i>1,000 acres</i> | <i>1,000 acres</i> | <i>1,000 acres</i> | <i>Percent</i>                    | <i>Percent</i> | <i>Percent</i> | <i>Percent</i>    |
| New York.....       | 239                          | 233                | 274                | 274                | 3.8                               | 1.5            | 3.5            | 8.0               |
| New Jersey.....     | 53                           | 49                 | 50                 | 52                 | 2.4                               | .5             | 2.0            | 2.5               |
| Pennsylvania.....   | 982                          | 893                | 903                | 903                | 3.0                               | 1.0            | 2.5            | 4.5               |
| North Atlantic..... | 1,274                        | 1,175              | 1,227              | 1,229              | 3.2                               | 1.1            | 2.6            | 5.2               |
| Ohio.....           | 1,520                        | 1,565              | 1,782              | 1,871              | 13.4                              | 1.0            | 2.0            | 2.5               |
| Indiana.....        | 1,781                        | 1,653              | 1,837              | 1,910              | 10.5                              | 3.0            | 5.0            | 2.0               |
| Illinois.....       | 2,212                        | 1,713              | 1,924              | 1,924              | 11.6                              | 3.0            | 3.0            | 5.0               |
| Michigan.....       | 756                          | 833                | 825                | 808                | 3.5                               | 1.0            | 3.0            | 5.0               |
| Wisconsin.....      | 36                           | 36                 | 35                 | 28                 | 10.6                              | 6.0            | 12.0           | 48.0              |
| Minnesota.....      | 204                          | 183                | 193                | 153                | 11.0                              | 5.3            | 10.0           | 60.0              |
| Iowa.....           | 379                          | 229                | 312                | 340                | 5.6                               | 11.0           | 9.0            | 20.0              |
| Missouri.....       | 1,677                        | 1,412              | 1,550              | 1,938              | 8.1                               | 10.0           | 4.0            | 2.0               |
| South Dakota.....   | 168                          | 348                | 303                | 167                | 18.6                              | 10.0           | 50.0           | 86.0              |
| Nebraska.....       | 3,667                        | 2,890              | 3,063              | 3,247              | 9.8                               | 33.5           | 30.0           | 30.0              |
| Kansas.....         | 13,255                       | 12,853             | 12,082             | 13,049             | 13.1                              | 20.1           | 47.4           | 28.3              |
| North Central.....  | 25,954                       | 24,020             | 23,911             | 25,415             | 11.5                              | 16.8           | 31.0           | 21.1              |
| Delaware.....       | 69                           | 86                 | 84                 | 92                 | 2.3                               | 2.0            | 4.0            | 4.0               |
| Maryland.....       | 469                          | 401                | 395                | 403                | 2.6                               | 5.0            | 1.5            | 2.0               |
| Virginia.....       | 623                          | 561                | 590                | 608                | 2.6                               | 1.5            | 2.0            | 2.0               |
| West Virginia.....  | 113                          | 130                | 146                | 161                | 4.6                               | 1.0            | 1.5            | 3.5               |
| North Carolina..... | 350                          | 399                | 445                | 467                | 3.0                               | 1.0            | 2.0            | 2.5               |
| South Carolina..... | 57                           | 77                 | 87                 | 91                 | 5.2                               | 2.5            | 4.0            | 2.0               |
| Georgia.....        | 55                           | 71                 | 87                 | 83                 | 10.2                              | 4.0            | 5.0            | 3.0               |
| South Atlantic..... | 1,766                        | 1,725              | 1,834              | 1,905              | 3.3                               | 2.4            | 2.1            | 2.4               |
| Kentucky.....       | 274                          | 296                | 338                | 345                | 13.2                              | 12.0           | 7.0            | 9.0               |
| Tennessee.....      | 294                          | 296                | 336                | 326                | 7.1                               | 3.0            | 3.5            | 4.0               |
| Alabama.....        | 8                            | 4                  | 8                  | 8                  | 8.3                               | 3.0            | 10.0           | 16.0              |
| Arkansas.....       | 26                           | 31                 | 36                 | 43                 | 9.3                               | 10.0           | 12.0           | 8.0               |
| Oklahoma.....       | 4,685                        | 4,419              | 4,338              | 4,685              | 10.2                              | 10.0           | 30.0           | 18.0              |
| Texas.....          | 3,883                        | 4,491              | 4,087              | 4,373              | 17.1                              | 25.6           | 56.1           | 30.0              |
| South Central.....  | 9,165                        | 9,537              | 9,143              | 9,780              | 12.3                              | 17.2           | 40.7           | 22.5              |
| Montana.....        | 846                          | 865                | 788                | 906                | 25.5                              | 20.0           | 25.0           | 20.0              |
| Idaho.....          | 683                          | 605                | 527                | 530                | 6.0                               | 7.0            | 20.0           | 11.0              |
| Wyoming.....        | 180                          | 202                | 180                | 171                | 12.7                              | 35.0           | 50.0           | 59.0              |
| Colorado.....       | 1,545                        | 924                | 1,205              | 964                | 25.2                              | 60.0           | 71.0           | 60.0              |
| New Mexico.....     | 417                          | 400                | 344                | 361                | 40.0                              | 45.9           | 45.0           | 63.0              |
| Arizona.....        | 25                           | 47                 | 51                 | 46                 | 3.1                               | 1.5            | 2.0            | 2.0               |
| Utah.....           | 193                          | 189                | 170                | 180                | 2.9                               | 4.0            | 5.0            | 10.0              |
| Nevada.....         | 3                            | 2                  | 3                  | 3                  | 1.0                               | 5.0            | 1.0            | 2.0               |
| Washington.....     | 1,324                        | 1,392              | 1,040              | 1,248              | 16.5                              | 6.0            | 60.0           | 10.0              |
| Oregon.....         | 889                          | 850                | 746                | 783                | 10.0                              | 4.0            | 70.0           | 18.0              |
| California.....     | 725                          | 736                | 681                | 735                | 17.6                              | 11.1           | 11.0           | 23.0              |
| Western.....        | 6,509                        | 6,212              | 5,735              | 5,977              | 18.9                              | 22.7           | 45.0           | 29.5              |
| United States.....  | 44,969                       | 42,609             | 41,850             | 44,306             | 12.2                              | 16.7           | 33.2           | 21.3              |

<sup>1</sup> For entire season, planting to harvest. Includes winter abandonment, which is estimated on May 1 of each season.

<sup>2</sup> Preliminary.

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TABLE 5.—Wheat: Acreage, production, and weighted average price per bushel received by producers, by States, average 1927-31, and annual 1933-34

| State and division  | Acreage harvested   |                |                |                   | Production          |                  |                  |                   | Price for crop of— |       |                   |
|---------------------|---------------------|----------------|----------------|-------------------|---------------------|------------------|------------------|-------------------|--------------------|-------|-------------------|
|                     | Average,<br>1927-31 | 1932           | 1933           | 1934 <sup>1</sup> | Average,<br>1927-31 | 1932             | 1933             | 1934 <sup>1</sup> | 1932               | 1933  | 1934 <sup>1</sup> |
|                     | 1,000<br>acres      | 1,000<br>acres | 1,000<br>acres | 1,000<br>acres    | 1,000<br>bushels    | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels  | Cents              | Cents | Cents             |
| Maine.....          | 2                   | 3              | 5              | 5                 | 49                  | 66               | 120              | 120               | 75                 | 128   | 150               |
| Vermont.....        | 1                   |                |                |                   | 23                  |                  |                  |                   |                    |       |                   |
| New York.....       | 259                 | 201            | 233            | 260               | 4,855               | 4,086            | 4,512            | 4,416             | 58                 | 88    | 100               |
| New Jersey.....     | 55                  | 50             | 48             | 49                | 1,240               | 1,050            | 1,056            | 1,127             | 59                 | 93    | 98                |
| Pennsylvania.....   | 981                 | 898            | 878            | 869               | 18,271              | 13,465           | 15,783           | 14,759            | 57                 | 87    | 94                |
| North Atlantic..... | 1,298               | 1,152          | 1,164          | 1,183             | 24,438              | 18,667           | 21,471           | 20,422            | 57.4               | 87.7  | 95.8              |
| Ohio.....           | 1,467               | 1,585          | 1,833          | 1,740             | 29,673              | 32,456           | 34,812           | 33,401            | 47                 | 88    | 92                |
| Indiana.....        | 1,542               | 1,468          | 1,580          | 1,808             | 27,626              | 23,502           | 22,905           | 32,152            | 43                 | 86    | 90                |
| Illinois.....       | 2,006               | 1,662          | 1,721          | 1,854             | 34,872              | 24,978           | 27,418           | 29,495            | 42                 | 85    | 90                |
| Michigan.....       | 753                 | 702            | 815            | 793               | 15,609              | 16,771           | 13,457           | 11,120            | 45                 | 80    | 92                |
| Wisconsin.....      | 103                 | 110            | 104            | 108               | 1,986               | 2,109            | 1,616            | 1,647             | 53                 | 81    | 100               |
| Minnesota.....      | 1,472               | 1,462          | 1,629          | 1,242             | 20,974              | 20,839           | 16,665           | 12,634            | 44                 | 77    | 103               |
| Iowa.....           | 426                 | 273            | 251            | 287               | 8,211               | 4,350            | 4,303            | 3,028             | 36                 | 78    | 92                |
| Missouri.....       | 1,510               | 1,404          | 1,359          | 1,522             | 20,374              | 15,733           | 16,989           | 21,281            | 41                 | 82    | 88                |
| North Dakota.....   | 9,560               | 10,639         | 10,093         | 3,782             | 107,531             | 110,396          | 72,115           | 21,196            | 36                 | 70    | 101               |
| South Dakota.....   | 3,405               | 3,958          | 1,248          | 151               | 36,466              | 53,468           | 5,120            | 598               | 34                 | 69    | 97                |
| Nebraska.....       | 3,717               | 2,277          | 2,437          | 2,310             | 65,418              | 27,958           | 29,206           | 15,838            | 36                 | 72    | 89                |
| Kansas.....         | 12,029              | 10,365         | 6,774          | 8,669             | 176,235             | 120,178          | 57,504           | 79,700            | 33                 | 71    | 88                |
| North Central.....  | 37,995              | 35,895         | 29,852         | 24,266            | 544,475             | 452,738          | 302,110          | 261,990           | 37.4               | 76.7  | 91.1              |
| Delaware.....       | 102                 | 79             | 83             | 81                | 2,002               | 908              | 1,162            | 1,539             | 57                 | 90    | 92                |
| Maryland.....       | 475                 | 380            | 395            | 387               | 9,375               | 4,940            | 6,320            | 7,934             | 53                 | 91    | 93                |
| Virginia.....       | 616                 | 579            | 550            | 578               | 9,582               | 6,263            | 7,425            | 8,092             | 58                 | 93    | 97                |
| West Virginia.....  | 107                 | 116            | 128            | 141               | 1,679               | 1,276            | 1,856            | 1,974             | 60                 | 89    | 98                |
| North Carolina..... | 340                 | 376            | 391            | 434               | 3,661               | 3,572            | 3,714            | 4,340             | 69                 | 103   | 108               |
| South Carolina..... | 53                  | 80             | 74             | 85                | 546                 | 780              | 592              | 765               | 65                 | 105   | 113               |
| Georgia.....        | 54                  | 74             | 67             | 84                | 505                 | 703              | 536              | 756               | 67                 | 106   | 113               |
| South Atlantic..... | 1,747               | 1,684          | 1,688          | 1,790             | 27,348              | 18,412           | 21,605           | 25,400            | 59.5               | 94.3  | 98.4              |
| Kentucky.....       | 212                 | 270            | 275            | 303               | 2,969               | 2,835            | 3,300            | 4,250             | 48                 | 93    | 92                |
| Tennessee.....      | 287                 | 272            | 286            | 323               | 2,950               | 2,584            | 2,917            | 3,392             | 60                 | 96    | 99                |
| Alabama.....        | 3                   | 6              | 4              | 7                 | 31                  | 60               | 34               | 66                | 59                 | 96    | 108               |
| Arkansas.....       | 22                  | 31             | 27             | 33                | 241                 | 248              | 216              | 297               | 44                 | 86    | 97                |
| Oklahoma.....       | 4,269               | 3,966          | 3,093          | 3,557             | 52,641              | 47,592           | 31,549           | 37,348            | 32                 | 68    | 82                |
| Texas.....          | 3,092               | 3,330          | 1,973          | 2,861             | 39,663              | 28,293           | 14,008           | 25,749            | 32                 | 74    | 81                |
| South Central.....  | 7,835               | 7,875          | 5,658          | 7,089             | 98,495              | 81,612           | 52,024           | 71,102            | 33.5               | 72.9  | 83.1              |
| Montana.....        | 3,847               | 4,070          | 3,551          | 2,572             | 50,388              | 55,610           | 26,480           | 28,174            | 34                 | 63    | 90                |
| Idaho.....          | 1,219               | 1,100          | 959            | 906               | 27,343              | 28,360           | 17,235           | 18,696            | 31                 | 55    | 72                |
| Wyoming.....        | 310                 | 277            | 234            | 130               | 4,039               | 3,102            | 2,138            | 1,041             | 31                 | 62    | 87                |
| Colorado.....       | 1,547               | 680            | 548            | 650               | 20,144              | 7,135            | 5,912            | 5,776             | 37                 | 85    | 86                |
| New Mexico.....     | 277                 | 276            | 245            | 125               | 3,837               | 2,027            | 1,485            | 711               | 35                 | 72    | 90                |
| Arizona.....        | 24                  | 38             | 46             | 50                | 554                 | 798              | 1,288            | 1,000             | 55                 | 80    | 84                |
| Utah.....           | 257                 | 260            | 254            | 220               | 5,519               | 5,332            | 4,079            | 3,147             | 41                 | 66    | 85                |
| Nevada.....         | 15                  | 18             | 17             | 15                | 372                 | 461              | 378              | 336               | 59                 | 78    | 84                |
| Washington.....     | 2,294               | 2,203          | 2,136          | 1,833             | 45,345              | 40,348           | 43,044           | 37,346            | 38                 | 60    | 77                |
| Oregon.....         | 1,034               | 991            | 903            | 832               | 22,701              | 20,600           | 17,608           | 12,944            | 41                 | 64    | 77                |
| California.....     | 641                 | 595            | 655            | 624               | 11,362              | 11,126           | 12,118           | 8,384             | 53                 | 78    | 79                |
| Western.....        | 11,463              | 10,508         | 9,548          | 7,907             | 191,603             | 174,359          | 131,765          | 117,555           | 36.9               | 63.0  | 80.4              |
| United States.....  | 60,388              | 57,114         | 47,910         | 42,235            | 836,359             | 745,788          | 528,975          | 496,469           | 37.9               | 74.1  | 88.0              |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 6.—Wheat, winter, durum, and other spring: Acreage, yield, and production, by States, averages, and annual 1933 and 1934

## WINTER

| State and division  | Acreage harvested  |                    |                    | Yield per acre   |                |                   | Production           |                      |                      |
|---------------------|--------------------|--------------------|--------------------|------------------|----------------|-------------------|----------------------|----------------------|----------------------|
|                     | Average, 1927-31   | 1933               | 1934 <sup>1</sup>  | Average, 1922-31 | 1933           | 1934 <sup>1</sup> | Average, 1927-31     | 1933                 | 1934 <sup>1</sup>    |
|                     | <i>1,000 acres</i> | <i>1,000 acres</i> | <i>1,000 acres</i> | <i>Bushels</i>   | <i>Bushels</i> | <i>Bushels</i>    | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> |
| New York.....       | 249                | 225                | 252                | 19.0             | 19.5           | 17.0              | 4, 674               | 4, 358               | 4, 284               |
| New Jersey.....     | 55                 | 45                 | 49                 | 21.7             | 22.0           | 23.0              | 1, 240               | 1, 056               | 1, 127               |
| Pennsylvania.....   | 971                | 871                | 862                | 18.4             | 18.0           | 17.0              | 18, 080              | 15, 678              | 14, 654              |
| North Atlantic..... | 1, 274             | 1, 144             | 1, 163             | 18.7             | 18.5           | 17.3              | 23, 994              | 21, 122              | 20, 065              |
| Ohio.....           | 1, 454             | 1, 828             | 1, 737             | 18.6             | 19.0           | 19.2              | 29, 431              | 34, 732              | 33, 350              |
| Indiana.....        | 1, 529             | 1, 570             | 1, 800             | 16.9             | 14.5           | 17.8              | 27, 401              | 22, 765              | 32, 040              |
| Illinois.....       | 1, 866             | 1, 662             | 1, 828             | 17.2             | 16.0           | 16.0              | 31, 611              | 26, 592              | 29, 248              |
| Michigan.....       | 749                | 808                | 784                | 19.5             | 14.0           | 15.0              | 15, 440              | 13, 332              | 10, 976              |
| Wisconsin.....      | 37                 | 32                 | 18                 | 18.9             | 14.5           | 11.5              | 729                  | 464                  | 207                  |
| Minnesota.....      | 166                | 158                | 79                 | 19.1             | 15.0           | 10.0              | 3, 284               | 2, 870               | 2, 790               |
| Iowa.....           | 378                | 308                | 250                | 19.9             | 18.0           | 11.0              | 7, 422               | 3, 744               | 2, 750               |
| Missouri.....       | 1, 499             | 1, 256             | 1, 519             | 13.6             | 12.5           | 14.0              | 20, 225              | 16, 950              | 21, 266              |
| South Dakota.....   | 112                | 174                | 42                 | 13.3             | 5.0            | 4.0               | 1, 386               | 870                  | 168                  |
| Nebraska.....       | 3, 545             | 2, 023             | 2, 144             | 15.6             | 12.8           | 7.0               | 62, 866              | 25, 894              | 15, 008              |
| Kansas.....         | 11, 966            | 6, 759             | 8, 659             | 13.6             | 8.5            | 9.2               | 175, 876             | 57, 452              | 79, 663              |
| North Central.....  | 23, 330            | 16, 578            | 18, 860            | 15.3             | 12.4           | 12.0              | 375, 671             | 205, 165             | 225, 466             |
| Delaware.....       | 102                | 83                 | 81                 | 19.0             | 14.0           | 19.0              | 2, 002               | 1, 162               | 1, 539               |
| Maryland.....       | 475                | 395                | 387                | 19.6             | 16.0           | 20.5              | 9, 375               | 6, 320               | 7, 934               |
| Virginia.....       | 616                | 550                | 578                | 14.9             | 13.5           | 14.0              | 9, 582               | 7, 425               | 8, 092               |
| West Virginia.....  | 107                | 128                | 141                | 14.4             | 14.5           | 14.0              | 1, 679               | 1, 856               | 1, 974               |
| North Carolina..... | 340                | 391                | 434                | 10.5             | 9.5            | 10.0              | 3, 661               | 3, 714               | 4, 340               |
| South Carolina..... | 53                 | 74                 | 85                 | 10.0             | 8.0            | 9.0               | 546                  | 592                  | 765                  |
| Georgia.....        | 54                 | 67                 | 84                 | 9.1              | 8.0            | 9.0               | 505                  | 536                  | 756                  |
| South Atlantic..... | 1, 747             | 1, 688             | 1, 790             | 15.1             | 12.8           | 14.2              | 27, 348              | 21, 605              | 25, 400              |
| Kentucky.....       | 212                | 275                | 303                | 13.6             | 12.0           | 13.8              | 2, 969               | 3, 300               | 4, 250               |
| Tennessee.....      | 267                | 286                | 323                | 11.2             | 10.2           | 10.5              | 2, 950               | 2, 917               | 3, 392               |
| Alabama.....        | 3                  | 4                  | 7                  | 10.9             | 8.5            | 9.5               | 31                   | 34                   | 66                   |
| Arkansas.....       | 22                 | 27                 | 33                 | 10.6             | 8.0            | 9.0               | 241                  | 216                  | 297                  |
| Oklahoma.....       | 4, 269             | 3, 093             | 3, 557             | 12.1             | 10.2           | 10.5              | 52, 641              | 31, 549              | 37, 348              |
| Texas.....          | 3, 092             | 1, 973             | 2, 861             | 12.1             | 7.1            | 9.0               | 39, 653              | 14, 008              | 25, 749              |
| South Central.....  | 7, 855             | 5, 658             | 7, 089             | 12.2             | 9.2            | 10.0              | 93, 495              | 52, 024              | 71, 102              |
| Montana.....        | 636                | 649                | 630                | 14.9             | 9.5            | 14.0              | 9, 016               | 6, 166               | 8, 820               |
| Idaho.....          | 655                | 484                | 469                | 19.6             | 15.0           | 17.5              | 12, 950              | 7, 260               | 8, 208               |
| Wyoming.....        | 130                | 101                | 74                 | 14.4             | 8.0            | 6.5               | 1, 707               | 808                  | 481                  |
| Colorado.....       | 1, 237             | 268                | 482                | 12.0             | 9.0            | 7.8               | 15, 491              | 2, 412               | 3, 760               |
| New Mexico.....     | 246                | 220                | 110                | 10.3             | 5.5            | 5.1               | 3, 421               | 1, 210               | 561                  |
| Arizona.....        | 24                 | 46                 | 50                 | 21.2             | 28.0           | 20.0              | 554                  | 1, 288               | 1, 000               |
| Utah.....           | 182                | 130                | 153                | 18.1             | 13.0           | 10.5              | 3, 333               | 2, 340               | 1, 606               |
| Nevada.....         | 4                  | 2                  | 3                  | 23.6             | 24.0           | 20.0              | 89                   | 48                   | 60                   |
| Washington.....     | 1, 194             | 557                | 936                | 23.0             | 22.0           | 22.7              | 29, 344              | 12, 254              | 21, 247              |
| Oregon.....         | 864                | 255                | 612                | 21.2             | 19.5           | 14.5              | 19, 256              | 4, 972               | 8, 874               |
| California.....     | 641                | 655                | 524                | 18.2             | 18.5           | 16.0              | 11, 362              | 12, 118              | 8, 354               |
| Western.....        | 5, 814             | 3, 417             | 4, 043             | 17.7             | 14.9           | 15.6              | 106, 553             | 50, 876              | 63, 001              |
| United States.....  | 40, 050            | 28, 485            | 32, 945            | 15.2             | 12.3           | 12.3              | 632, 061             | 350, 792             | 405, 034             |

## DURUM

|                   |        |        |     |      |      |      |         |         |        |
|-------------------|--------|--------|-----|------|------|------|---------|---------|--------|
| Minnesota.....    | 231    | 88     | 57  | 14.8 | 10.0 | 12.0 | 3, 270  | 880     | 684    |
| North Dakota..... | 3, 600 | 2, 093 | 900 | 12.0 | 7.3  | 6.9  | 44, 028 | 15, 279 | 6, 210 |
| South Dakota..... | 1, 249 | 93     | 11  | 11.9 | 3.5  | 3.5  | 13, 890 | 326     | 38     |
| Montana.....      | 25     | 36     | 22  | 11.9 | 7.0  | 7.0  | 273     | 252     | 154    |
| 4 States.....     | 5, 105 | 2, 310 | 990 | 12.1 | 7.2  | 7.2  | 61, 460 | 16, 737 | 7, 086 |

<sup>1</sup> Preliminary.

TABLE 6.—Wheat, winter, durum, and other spring: Acreage, yield, and production, by States, averages, and annual 1933 and 1934—Continued

## OTHER SPRING

| State and division  | Acreage harvested   |                |                   | Yield per acre      |         |                   | Production          |                  |                   |
|---------------------|---------------------|----------------|-------------------|---------------------|---------|-------------------|---------------------|------------------|-------------------|
|                     | Average,<br>1927-31 | 1933           | 1934 <sup>1</sup> | Average,<br>1927-31 | 1933    | 1934 <sup>1</sup> | Average,<br>1927-31 | 1933             | 1934 <sup>1</sup> |
|                     | 1,000<br>acres      | 1,000<br>acres | 1,000<br>acres    | Bushels             | Bushels | Bushels           | 1,000<br>bushels    | 1,000<br>bushels | 1,000<br>bushels  |
| Maine.....          | 2                   | 5              | 5                 | 21.6                | 24.0    | 24.0              | 49                  | 120              | 120               |
| Vermont.....        | 1                   |                |                   | 19.5                |         |                   | 23                  |                  |                   |
| New York.....       | 10                  | 8              | 8                 | 18.0                | 15.5    | 16.5              | 181                 | 124              | 132               |
| Pennsylvania.....   | 11                  | 7              | 7                 | 17.3                | 15.0    | 15.0              | 191                 | 105              | 105               |
| North Atlantic..... | 24                  | 20             | 20                | 18.6                | 17.4    | 17.8              | 444                 | 349              | 357               |
| Ohio.....           | 13                  | 5              | 3                 | 20.3                | 16.0    | 17.0              | 242                 | 80               | 51                |
| Indiana.....        | 13                  | 10             | 8                 | 17.2                | 14.0    | 14.0              | 225                 | 140              | 112               |
| Illinois.....       | 140                 | 59             | 26                | 19.5                | 14.0    | 9.5               | 2,761               | 826              | 247               |
| Michigan.....       | 9                   | 10             | 9                 | 18.1                | 12.5    | 16.0              | 168                 | 125              | 144               |
| Wisconsin.....      | 66                  | 72             | 90                | 18.8                | 16.0    | 16.0              | 1,258               | 1,152            | 1,440             |
| Minnesota.....      | 1,076               | 1,388          | 1,106             | 14.0                | 9.7     | 10.0              | 14,420              | 13,415           | 11,060            |
| Iowa.....           | 48                  | 43             | 37                | 15.8                | 13.0    | 7.5               | 789                 | 559              | 278               |
| Missouri.....       | 11                  | 3              | 3                 | 14.4                | 13.0    | 5.0               | 149                 | 39               | 15                |
| North Dakota.....   | 5,960               | 8,005          | 2,882             | 10.8                | 7.1     | 5.2               | 63,503              | 56,836           | 14,886            |
| South Dakota.....   | 2,044               | 981            | 98                | 10.1                | 4.0     | 4.0               | 21,191              | 3,924            | 892               |
| Nebraska.....       | 172                 | 414            | 166               | 13.2                | 8.0     | 5.0               | 2,553               | 3,312            | 830               |
| Kansas.....         | 33                  | 15             | 10                | 8.6                 | 3.5     | 8.7               | 358                 | 52               | 37                |
| North Central.....  | 9,584               | 11,000         | 4,438             | 11.4                | 7.3     | 6.7               | 107,617             | 80,460           | 29,592            |
| Montana.....        | 3,185               | 2,866          | 1,920             | 13.0                | 7.0     | 10.0              | 41,099              | 20,062           | 19,200            |
| Idaho.....          | 564                 | 475            | 437               | 23.8                | 21.0    | 24.0              | 14,393              | 9,975            | 10,488            |
| Wyoming.....        | 180                 | 133            | 56                | 12.6                | 10.0    | 10.0              | 2,332               | 1,330            | 560               |
| Colorado.....       | 309                 | 280            | 168               | 14.7                | 12.5    | 12.0              | 4,653               | 3,500            | 2,016             |
| New Mexico.....     | 30                  | 25             | 15                | 12.4                | 11.0    | 10.0              | 416                 | 275              | 150               |
| Utah.....           | 75                  | 74             | 67                | 27.4                | 23.5    | 23.0              | 2,186               | 1,739            | 1,541             |
| Nevada.....         | 11                  | 15             | 12                | 25.4                | 22.0    | 23.0              | 283                 | 330              | 276               |
| Washington.....     | 1,099               | 1,579          | 947               | 14.7                | 19.5    | 17.0              | 16,001              | 30,790           | 16,099            |
| Oregon.....         | 169                 | 648            | 220               | 18.0                | 19.5    | 18.5              | 3,415               | 12,636           | 4,070             |
| Western.....        | 5,624               | 6,085          | 3,842             | 15.1                | 13.2    | 14.2              | 84,777              | 80,637           | 54,400            |
| United States.....  | 15,233              | 17,115         | 8,300             | 12.7                | 9.4     | 10.2              | 192,838             | 161,446          | 84,349            |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.





| U.S.S.R. European and Asiatic                                      | 43, 137  | 91, 110  | 85, 269  | 82, 138  | 77, 300  | 10. 6 | 8. 3  | 8. 7  | 12. 4 | 457, 857    | 753, 238    | 744, 052    | 1, 018, 893 |
|--|----------|----------|----------|----------|----------|-------|-------|-------|-------|-------------|-------------|-------------|-------------|
| Estimated European total, excluding U.S.S.R.                       | 60, 400  | 70, 000  | 75, 400  | 78, 000  | 77, 300  |       |       |       |       | 1, 196, 000 | 1, 498, 000 | 1, 492, 000 | 1, 745, 000 |
| <b>Africa:</b>   |          |          |          |          |          |       |       |       |       |             |             |             |             |
| Morocco.....   | 2, 272   | 2, 537   | 2, 713   | 3, 210   | 2, 817   | 9. 6  | 11. 7 | 10. 3 | 9. 0  | 21, 768     | 29, 783     | 27, 970     | 28, 902     |
| Algeria.....   | 3, 406   | 3, 640   | 3, 736   | 3, 993   | 4, 005   | 7. 8  | 7. 0  | 7. 8  | 8. 0  | 26, 716     | 25, 649     | 29, 237     | 31, 232     |
| Tunisia.....   | 1, 400   | 1, 977   | 2, 392   | 1, 754   | 1, 803   | 5. 6  | 7. 1  | 7. 3  | 6. 2  | 7, 892      | 13, 963     | 17, 453     | 31, 988     |
| Egypt.....   | 1, 462   | 1, 049   | 1, 762   | 1, 441   | 1, 441   | 25. 2 | 27. 9 | 26. 8 | 28. 0 | 36, 805     | 46, 073     | 52, 586     | 30, 951     |
| <b>Asia:</b>   |          |          |          |          |          |       |       |       |       |             |             |             |             |
| Turkey.....  | 17, 093  | 8, 772   | 8, 555   | 7, 267   | 6, 871   | 25. 6 | 12. 0 | 8. 3  | 13. 7 | 230, 510    | 104, 946    | 71, 135     | 99, 636     |
| India.....   | 26, 561  | 32, 189  | 33, 903  | 32, 070  | 36, 062  | 11. 4 | 10. 8 | 10. 0 | 10. 7 | 336, 276    | 347, 424    | 336, 896    | 352, 763    |
| Japanese Empire:   |          |          |          |          |          |       |       |       |       |             |             |             |             |
| Japan.....   | 1, 107   | 1, 228   | 1, 247   | 1, 509   | 1, 687   | 22. 5 | 25. 2 | 23. 1 | 20. 8 | 20, 809     | 30, 892     | 31, 336     | 40, 370     |
| Chosen.....  | 882      | 817      | 793      | 700      | 708      | 11. 0 | 10. 2 | 10. 8 | 11. 2 | 10, 283     | 6, 341      | 8, 970      | 8, 887      |
| Taiwan.....  | 7        | 1        | 2        |          |          | 18. 0 | 12. 0 | 12. 0 |       | 64          | 18          | 53          |             |
| Kwantung.....  | 4        | 4        | 3        |          |          | 11. 8 | 13. 2 | 17. 7 |       | 47          | 58          |             |             |
| Estimated Asiatic total, excluding U.S.S.R. and China.             | 38, 000  | 45, 300  | 46, 500  | 44, 700  | 47, 500  |       |       |       |       | 437, 000    | 555, 000    | 471, 000    | 527, 000    |
| Estimated Northern Hemisphere total, excluding U.S.S.R. and China. | 195, 500 | 210, 000 | 218, 000 | 208, 200 | 202, 500 |       |       |       |       | 2, 801, 000 | 3, 330, 000 | 3, 292, 000 | 3, 199, 000 |
| <b>SOUTHERN HEMISPHERE</b>   |          |          |          |          |          |       |       |       |       |             |             |             |             |
| Chile.....   | 1, 440   | 1, 517   | 1, 466   | 2, 103   | 2, 107   | 17. 8 | 14. 0 | 17. 8 | 16. 8 | 25, 701     | 21, 187     | 26, 114     | 35, 307     |
| Uruguay.....   | 807      | 1, 080   | 947      | 1, 189   | 1, 097   | 11. 2 | 10. 4 | 5. 7  | 12. 3 | 9, 080      | 11, 259     | 5, 407      | 14, 074     |
| Argentina.....   | 10, 189  | 16, 028  | 17, 789  | 18, 041  | 17, 198  | 12. 6 | 13. 7 | 13. 5 | 15. 9 | 203, 888    | 219, 696    | 240, 880    | 280, 120    |
| Union of South Africa.....   | 888      | 1, 736   | 1, 556   | 1, 257   | 1, 523   | 8. 6  | 7. 9  | 6. 8  | 8. 9  | 7, 459      | 13, 713     | 10, 627     | 13, 533     |
| Australia.....   | 10, 010  | 14, 741  | 15, 765  | 14, 092  | 12, 965  | 12. 8 | 12. 9 | 13. 6 | 11. 7 | 128, 620    | 190, 612    | 213, 927    | 175, 370    |
| New Zealand.....   | 224      | 269      | 303      | 295      | 229      | 26. 6 | 24. 5 | 36. 5 | 30. 6 | 6, 640      | 6, 583      | 11, 055     | 9, 036      |
| Estimated Southern Hemisphere total.....                           | 31, 000  | 37, 500  | 40, 700  | 40, 400  | 37, 200  |       |       |       |       | 390, 000    | 474, 000    | 519, 000    | 542, 000    |
| Estimated world total, excluding U.S.S.R. and China.....           | 226, 500 | 253, 500 | 258, 700 | 248, 600 | 239, 700 |       |       |       |       | 3, 281, 000 | 3, 894, 000 | 3, 811, 000 | 3, 741, 000 |
|  |          |          |          |          |          |       |       |       |       |             |             |             | 3, 423, 000 |

1 Preliminary.

2 Year 1925.

Bureau of Agricultural Economics. Official sources and International Institute of Agriculture. "U.S.S.R." means Union of Soviet Socialist Republics.

Both acreage and production figures refer to the year of harvest. Harvests of the Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow theirs, for 1934-35 the crop harvested in the Northern Hemisphere countries in 1934 is combined with the Southern Hemisphere harvest which begins late in 1934 and ends early in 1935.

TABLE 8.—Wheat: Production, world and selected countries, 1890-91 to 1934-35

| Crop year            | World, excluding Russia and China | Northern Hemisphere, excluding Russia and China | Europe, excluding Russia | Selected countries  |                 |                 |                 |                 |                 |                 |
|----------------------|-----------------------------------|---|--------------------------|---------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                      |                                   |   |                          | Russia <sup>1</sup> | United States   | Canada          | India           | Argentina       | Australia       | France          |
|                      | Million bushels                   | Million bushels                                 | Million bushels          | Million bushels     | Million bushels | Million bushels | Million bushels | Million bushels | Million bushels | Million bushels |
| 1890-91              | 2,018                             | 1,944   | 1,082                    | 212                 | 449             | 42              | 229             | 31              | 27              | 330             |
| 1891-92              | 2,152                             | 2,066   | 946                      | 173                 | 678             | 42              | 257             | 36              | 26              | 215             |
| 1892-93              | 2,226                             | 2,103   | 1,061                    | 255                 | 612             | 48              | 227             | 59              | 33              | 311             |
| 1893-94              | 2,150                             | 2,034   | 1,073                    | 375                 | 506             | 41              | 286             | 82              | 37              | 278             |
| 1894-95              | 2,231                             | 2,120   | 1,110                    | 355                 | 542             | 43              | 271             | 61              | 28              | 344             |
| 1895-96              | 2,172                             | 2,086   | 1,093                    | 310                 | 542             | 41              | 261             | 46              | 13              | 340             |
| 1896-97              | 2,124                             | 2,054   | 1,151                    | 412                 | 523             | 33              | 201             | 32              | 21              | 340             |
| 1897-98              | 1,968                             | 1,866   | 874                      | 340                 | 606             | 47              | 200             | 53              | 28              | 242             |
| 1898-99              | 2,632                             | 2,452   | 1,209                    | 459                 | 768             | 63              | 269             | 105             | 41              | 365             |
| 1899-1900            | 2,416                             | 2,246   | 1,147                    | 454                 | 655             | 57              | 255             | 102             | 40              | 365             |
| 1900-1901            | 2,297                             | 2,151   | 1,134                    | 423                 | 599             | 56              | 200             | 75              | 48              | 326             |
| 1901-2               | 2,516                             | 2,398   | 1,135                    | 423                 | 763             | 85              | 265             | 56              | 39              | 311             |
| 1902-3               | 2,537                             | 2,394   | 1,240                    | 607                 | 637             | 94              | 227             | 104             | 12              | 328             |
| 1903-4               | 2,739                             | 2,498   | 1,305                    | 621                 | 663             | 78              | 298             | 130             | 74              | 303             |
| 1904-5               | 2,529                             | 2,293   | 1,154                    | 667                 | 559             | 69              | 360             | 151             | 55              | 300             |
| 1905-6               | 2,754                             | 2,519   | 1,265                    | 636                 | 706             | 106             | 253             | 135             | 69              | 335             |
| 1906-7               | 3,026                             | 2,771   | 1,398                    | 543                 | 741             | 126             | 320             | 156             | 66              | 329             |
| 1907-8               | 2,694                             | 2,419   | 1,205                    | 571                 | 629             | 93              | 317             | 192             | 45              | 381             |
| 1908-9               | 2,618                             | 2,357   | 1,204                    | 628                 | 643             | 112             | 229             | 156             | 63              | 317             |
| 1909-10              | 2,860                             | 2,593   | 1,263                    | 846                 | 684             | 167             | 285             | 131             | 90              | 359             |
| 1910-11              | 2,815                             | 2,533   | 1,218                    | 836                 | 625             | 132             | 360             | 146             | 95              | 253             |
| 1911-12              | 3,087                             | 2,801   | 1,366                    | 563                 | 618             | 231             | 376             | 166             | 72              | 322             |
| 1912-13              | 3,140                             | 2,817   | 1,307                    | 801                 | 730             | 224             | 371             | 187             | 92              | 334             |
| 1913-14              | 3,129                             | 2,832   | 1,322                    | 1,028               | 751             | 232             | 368             | 105             | 103             | 319             |
| 1914-15              | 2,884                             | 2,649   | 1,096                    | 3,334               | 897             | 161             | 312             | 169             | 25              | 283             |
| 1915-16              | 3,520                             | 3,124   | 1,151                    | 3,827               | 1,009           | 394             | 377             | 169             | 179             | 228             |
| 1916-17              | 2,717                             | 2,439   | 1,029                    | 3,631               | 635             | 263             | 323             | 84              | 152             | 205             |
| 1917-18              | 2,693                             | 2,285   | 865                      | 622                 | 620             | 234             | 382             | 235             | 115             | 135             |
| 1918-19              | 2,935                             | 2,631   | 959                      | -----               | 904             | 189             | 370             | 180             | 76              | 229             |
| 1919-20              | 2,809                             | 2,504   | 900                      | -----               | 952             | 193             | 280             | 217             | 46              | 187             |
| 1920-21              | 2,965                             | 2,612   | 949                      | 320                 | 843             | 263             | 378             | 156             | 146             | 237             |
| 1921-22              | 3,179                             | 2,797   | 1,224                    | 205                 | 819             | 301             | 250             | 191             | 129             | 323             |
| 1922-23              | 3,203                             | 2,845   | 1,045                    | 339                 | 847             | 400             | 367             | 196             | 109             | 243             |
| 1923-24              | 3,519                             | 3,087   | 1,257                    | 451                 | 759             | 474             | 372             | 248             | 125             | 276             |
| 1924-25              | 3,123                             | 2,715   | 1,058                    | 480                 | 840             | 292             | 361             | 191             | 165             | 281             |
| 1925-26              | 3,350                             | 3,013   | 1,397                    | 764                 | 699             | 355             | 331             | 191             | 115             | 330             |
| 1926-27              | 3,495                             | 3,045   | 1,216                    | 898                 | 834             | 407             | 325             | 230             | 161             | 232             |
| 1927-28              | 3,673                             | 3,200   | 1,274                    | 792                 | 875             | 480             | 335             | 282             | 118             | 276             |
| 1928-29              | 3,995                             | 3,419   | 1,410                    | 807                 | 913             | 567             | 291             | 349             | 180             | 281             |
| 1929-30              | 3,573                             | 3,206   | 1,451                    | 694                 | 822             | 305             | 321             | 163             | 127             | 337             |
| 1930-31              | 3,850                             | 3,347   | 1,360                    | 959                 | 890             | 421             | 391             | 232             | 214             | 228             |
| 1931-32              | 3,854                             | 3,380   | 1,436                    | 753                 | 932             | 321             | 347             | 220             | 191             | 264             |
| 1932-33              | 3,811                             | 3,292   | 1,492                    | 741                 | 746             | 443             | 337             | 241             | 214             | 334             |
| 1933-34              | 3,741                             | 3,199   | 1,748                    | 1,019               | 529             | 270             | 353             | 286             | 175             | 362             |
| 1934-35 <sup>6</sup> | 3,423                             | 2,951   | 1,520                    | -----               | 495             | 275             | 349             | 252             | 137             | 332             |

<sup>1</sup> Includes all Russian territory reporting for years named.<sup>2</sup> Total Russian Empire exclusive of the 10 Vistula Provinces of Russian Poland and the Province of Batum in Transcaucasia.<sup>3</sup> Exclusive of Russian Poland, Lithuania, parts of present Latvia and Ukraine, and 2 Provinces of Transcaucasia.<sup>4</sup> Beginning with this date production is within post-war boundaries and therefore not comparable with earlier years.<sup>6</sup> Preliminary.

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Production figures refer to the year of harvest. Harvests of the Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow; thus, for 1934-35 the crop harvested in the Northern Hemisphere countries in 1934 is combined with the Southern Hemisphere harvest which begins late in 1934 and ends early in 1935.

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TABLE 9.—Wheat: Stocks on farms, quarterly, United States, 1925-26 to 1934-35

| Season  | Stocks on farms |               |               |                     | Season  | Stocks on farms |               |               |                     |
|---------|-----------------|---------------|---------------|---------------------|---------|-----------------|---------------|---------------|---------------------|
|         | Oct. 1          | Jan. 1        | Apr. 1        | July 1 <sup>1</sup> |         | Oct. 1          | Jan. 1        | Apr. 1        | July 1 <sup>1</sup> |
|         | 1,000 bushels   | 1,000 bushels | 1,000 bushels | 1,000 bushels       |         | 1,000 bushels   | 1,000 bushels | 1,000 bushels | 1,000 bushels       |
| 1925-26 |                 |               | 79,050        | 27,104              | 1930-31 | 400,026         | 258,949       | 118,772       | 38,039              |
| 1926-27 | 370,310         | 216,825       | 103,871       | 28,743              | 1931-32 | 498,383         | 322,517       | 169,090       | 92,772              |
| 1927-28 | 378,871         | 209,858       | 88,057        | 19,567              | 1932-33 | 415,760         | 273,012       | 188,185       | 82,809              |
| 1928-29 | 449,013         | 269,332       | 134,114       | 44,979              | 1933-34 | 310,354         | 196,506       | 116,298       | 60,823              |
| 1929-30 | 344,009         | 221,974       | 130,729       | 60,092              | 1934-35 | 230,912         | 136,044       | 98,699        |                     |

<sup>1</sup> Includes old crop only.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 10.—Wheat: Monthly marketings by farmers, as reported by about 3,500 mills and elevators, United States, 1924-25 to 1933-34

| Season  | Percentage of receipts during— |          |          |          |          |          |          |          |          |          |          |          |          |          |
|---------|--------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|         | June                           | July     | Aug.     | Sept.    | Oct.     | Nov.     | Dec.     | Jan.     | Feb.     | Mar.     | Apr.     | May      | June     | Season   |
|         | Per cent                       | Per cent | Per cent | Per cent | Per cent | Per cent | Per cent | Per cent | Per cent | Per cent | Per cent | Per cent | Per cent | Per cent |
| 1924-25 | 2.1                            | 12.9     | 20.8     | 17.8     | 14.0     | 7.8      | 5.6      | 5.8      | 4.2      | 2.5      | 1.7      | 3.3      | 2.0      | 100.0    |
| 1925-26 | 2.3                            | 14.0     | 18.2     | 15.2     | 11.2     | 9.0      | 7.2      | 4.8      | 4.1      | 3.0      | 3.0      | 2.9      | 2.1      | 100.0    |
| 1926-27 | 1.7                            | 22.2     | 20.6     | 13.5     | 9.5      | 5.9      | 5.1      | 4.6      | 4.7      | 3.7      | 2.7      | 3.5      | 2.3      | 100.0    |
| 1927-28 | 2.7                            | 15.0     | 18.0     | 19.8     | 12.6     | 7.8      | 5.3      | 4.5      | 4.0      | 3.8      | 2.5      | 2.7      | 1.3      | 100.0    |
| 1928-29 | 1.3                            | 19.0     | 18.3     | 17.2     | 12.0     | 7.2      | 5.4      | 4.2      | 4.3      | 3.5      | 2.8      | 2.7      | 2.1      | 100.0    |
| 1929-30 | 5.1                            | 25.5     | 22.3     | 14.0     | 8.6      | 4.8      | 4.5      | 3.1      | 2.9      | 2.5      | 2.5      | 2.6      | 1.6      | 100.0    |
| 1930-31 | 3.9                            | 25.2     | 21.0     | 12.3     | 7.1      | 4.5      | 4.7      | 4.7      | 4.7      | 3.5      | 3.1      | 3.9      | 1.4      | 100.0    |
| 1931-32 | 6.0                            | 27.6     | 18.5     | 9.5      | 7.5      | 4.3      | 4.4      | 4.0      | 5.8      | 3.4      | 3.5      | 4.0      | 1.5      | 100.0    |
| 1932-33 | 4.8                            | 18.7     | 18.6     | 14.0     | 7.8      | 5.5      | 4.8      | 3.6      | 3.4      | 3.4      | 4.3      | 5.4      | 4.7      | 100.0    |
| 1933-34 | 9.0                            | 21.5     | 20.4     | 13.8     | 7.0      | 5.0      | 3.6      | 3.6      | 3.3      | 3.4      | 2.7      | 3.0      | 3.7      | 100.0    |

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TABLE 11.—Wheat: Production and farm disposition, United States, 1919-20 to 1934-35

| Season               | Production    | Used for seed |                         | Fed to livestock <sup>1</sup> | Ground at mills for home use or exchanged for flour <sup>1</sup> | Sold or for sale |
|----------------------|---------------|---------------|-------------------------|-------------------------------|--|------------------|
|                      |               | Total         | Home grown <sup>1</sup> |                               |  |                  |
|                      | 1,000 bushels | 1,000 bushels | 1,000 bushels           | 1,000 bushels                 | 1,000 bushels  | 1,000 bushels    |
| 1919-20              | 952,097       | 90,858        | 89,402                  | 36,606                        | 14,136   | 811,953          |
| 1920-21              | 843,277       | 89,269        | 87,735                  | 20,611                        | 11,725   | 723,206          |
| 1921-22              | 818,064       | 88,322        | 87,845                  | 32,744                        | 11,358   | 687,017          |
| 1922-23              | 846,649       | 85,140        | 83,454                  | 49,357                        | 11,140   | 702,698          |
| 1923-24              | 759,482       | 73,544        | 71,806                  | 66,857                        | 10,840   | 609,979          |
| 1924-25              | 840,091       | 81,278        | 80,398                  | 55,555                        | 10,553   | 693,290          |
| 1925-26              | 669,142       | 79,540        | 75,625                  | 28,248                        | 10,487   | 554,782          |
| 1926-27              | 833,544       | 85,065        | 82,971                  | 34,383                        | 10,344   | 705,846          |
| 1927-28              | 874,733       | 91,416        | 88,878                  | 44,461                        | 9,286  | 732,108          |
| 1928-29              | 912,961       | 84,577        | 82,421                  | 55,113                        | 8,196  | 767,231          |
| 1929-30              | 822,180       | 83,930        | 83,244                  | 59,152                        | 6,973  | 672,811          |
| 1930-31              | 889,702       | 81,060        | 80,318                  | 157,517                       | 10,538   | 641,329          |
| 1931-32              | 932,221       | 80,098        | 77,292                  | 171,258                       | 14,917   | 668,754          |
| 1932-33              | 745,788       | 83,635        | 79,412                  | 122,493                       | 15,724   | 528,159          |
| 1933-34              | 528,975       | 71,703        | 68,214                  | 69,625                        | 15,442   | 375,694          |
| 1934-35 <sup>2</sup> | 496,469       | 75,478        | 68,156                  | 81,373                        | 14,876   | 332,064          |

<sup>1</sup> Relates to quantities used by producers on their own farms. Additional quantities of purchased wheat are so utilized.<sup>2</sup> Preliminary. Disposition items are approximations made in March 1935.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 12.—Wheat: United States production, 1923-29 to 1934-35, and exports by classes, 1924-25 to 1933-34

## ESTIMATED PRODUCTION

| Year beginning July | Hard red spring | Durum         | Hard red winter | Soft red winter | White <sup>1</sup> | Flour as wheat | Total         |
|---------------------|-----------------|---------------|-----------------|-----------------|--------------------|----------------|---------------|
|                     | 1,000 bushels   | 1,000 bushels | 1,000 bushels   | 1,000 bushels   | 1,000 bushels      | 1,000 bushels  | 1,000 bushels |
| 1923-29             | 202,128         | 97,766        | 392,155         | 128,345         | 92,567             | -----          | 912,961       |
| 1929-30             | 144,712         | 56,307        | 370,390         | 166,430         | 84,341             | -----          | 822,180       |
| 1930-31             | 160,594         | 59,191        | 403,363         | 178,794         | 87,760             | -----          | 880,702       |
| 1931-32             | 70,376          | 21,268        | 515,925         | 254,480         | 70,174             | -----          | 935,221       |
| 1932-33             | 191,331         | 41,607        | 280,245         | 149,567         | 83,033             | -----          | 745,783       |
| 1933-34             | 108,834         | 18,071        | 168,738         | 147,689         | 85,643             | -----          | 528,975       |
| 1934-35             | 53,791          | 7,561         | 201,292         | 168,224         | 65,601             | -----          | 496,469       |

ESTIMATED EXPORTS OF DOMESTIC WHEAT AND FLOUR <sup>2</sup>

|         |        |        |         |        |        |        |         |
|---------|--------|--------|---------|--------|--------|--------|---------|
| 1924-25 | 21,567 | 33,816 | 120,573 | 8,333  | 11,201 | 65,313 | 260,803 |
| 1925-26 | 4,958  | 26,324 | 9,677   | 2,563  | 19,157 | 44,846 | 108,035 |
| 1926-27 | 2,174  | 21,970 | 73,123  | 31,352 | 27,631 | 62,910 | 219,160 |
| 1927-28 | 6,000  | 36,500 | 60,299  | 12,800 | 30,400 | 60,260 | 206,250 |
| 1928-29 | 2,200  | 47,500 | 35,014  | 3,000  | 15,400 | 60,573 | 163,657 |
| 1929-30 | 1,900  | 14,800 | 54,375  | 2,700  | 18,400 | 61,070 | 153,245 |
| 1930-31 | 600    | 12,100 | 47,395  | 2,600  | 13,700 | 55,110 | 131,475 |
| 1931-32 | 100    | 4,700  | 75,521  | 2,200  | 14,000 | 39,276 | 135,797 |
| 1932-33 | -----  | 1,700  | 16,937  | -----  | 2,200  | 20,324 | 41,211  |
| 1933-34 | -----  | -----  | 1,400   | -----  | 17,399 | 18,202 | 37,001  |

<sup>1</sup> White wheat in Pacific Northwest region consists of both spring and winter wheat; no attempt has been made to classify this wheat as other than white wheat, part of which is spring and part winter.

<sup>2</sup> Computed from total exports by customs districts on the basis of inspections of wheat for export by ports and classes in the United States and Canadian Eastern Grain Division.

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Estimated production by classes based on questionnaire surveys of local authorities, supplemented by judgment of cereal specialists. Inspection of United States wheat for export data furnished monthly by Federal grain supervision officers at the export markets. Inspections are made at the ports of export. Export figures from reports of the Bureau of Foreign and Domestic Commerce.

TABLE 13.—Wheat and wheat including flour in terms of grain: Exports from the United States, by months, 1924-25 to 1933-34

## WHEAT, GRAIN

| Year                 | July          | Aug.          | Sept.         | Oct.          | Nov.          | Dec.          | Jan.          | Feb.          | Mar.          | Apr.          | May           | June          | Total         |
|----------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                      | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels |
| 1924-25              | 4,048         | 16,835        | 32,662        | 45,128        | 27,831        | 17,791        | 8,464         | 7,387         | 9,960         | 8,424         | 9,870         | 7,070         | 195,490       |
| 1925-26              | 5,295         | 7,901         | 9,391         | 4,354         | 4,696         | 3,695         | 2,412         | 1,700         | 3,770         | 2,533         | 9,368         | 8,074         | 63,189        |
| 1926-27              | 16,091        | 29,075        | 23,760        | 17,589        | 14,340        | 9,622         | 8,078         | 4,889         | 5,084         | 11,363        | 8,960         | 7,459         | 156,250       |
| 1927-28              | 8,397         | 23,418        | 33,776        | 29,236        | 20,731        | 6,917         | 5,956         | 2,276         | 2,740         | 2,723         | 4,823         | 5,006         | 145,990       |
| 1928-29              | 4,153         | 10,374        | 17,979        | 22,058        | 10,562        | 7,641         | 3,399         | 3,214         | 3,487         | 3,942         | 11,741        | 4,564         | 103,114       |
| 1929-30              | 8,691         | 12,094        | 13,104        | 8,767         | 9,977         | 7,149         | 8,245         | 5,185         | 2,414         | 3,050         | 5,433         | 8,066         | 92,175        |
| 1930-31              | 11,934        | 18,646        | 12,716        | 6,105         | 3,266         | 2,713         | 1,290         | 137           | 1,397         | 3,531         | 6,404         | 8,136         | 76,365        |
| 1931-32              | 12,731        | 8,911         | 8,397         | 11,873        | 9,519         | 7,896         | 4,072         | 4,650         | 5,749         | 9,351         | 7,284         | 6,088         | 96,621        |
| 1932-33              | 3,208         | 3,899         | 2,479         | 2,656         | 3,714         | 1,729         | 1,793         | 729           | 456           | 194           | 14            | 16            | 20,887        |
| 1933-34 <sup>1</sup> | 29            | 21            | 43            | 24            | 512           | 4,152         | 2,867         | 2,667         | 3,065         | 3,576         | 1,456         | 387           | 18,799        |

## WHEAT, INCLUDING FLOUR IN TERMS OF GRAIN

|                      |        |        |        |        |        |        |        |        |        |        |        |        |         |
|----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| 1924-25              | 7,758  | 21,295 | 39,537 | 53,834 | 35,425 | 24,616 | 13,126 | 11,784 | 16,480 | 12,912 | 13,114 | 10,922 | 260,803 |
| 1925-26              | 8,944  | 12,007 | 13,152 | 9,113  | 8,794  | 8,437  | 5,587  | 4,742  | 7,039  | 6,452  | 12,558 | 11,210 | 108,035 |
| 1926-27              | 19,819 | 35,479 | 31,031 | 24,098 | 20,655 | 15,301 | 12,821 | 8,997  | 9,183  | 16,138 | 14,123 | 11,515 | 219,160 |
| 1927-28              | 12,100 | 28,361 | 39,792 | 36,347 | 27,003 | 12,197 | 11,809 | 6,725  | 7,492  | 7,410  | 8,793  | 9,230  | 260,250 |
| 1928-29              | 7,193  | 14,754 | 22,772 | 28,567 | 16,195 | 12,053 | 9,833  | 8,948  | 9,090  | 9,151  | 16,128 | 9,003  | 163,657 |
| 1929-30              | 13,784 | 17,338 | 18,568 | 14,922 | 15,155 | 12,428 | 14,073 | 9,535  | 7,321  | 7,438  | 10,208 | 12,475 | 153,245 |
| 1930-31              | 16,377 | 24,413 | 19,352 | 12,355 | 8,701  | 6,906  | 5,731  | 3,717  | 7,757  | 7,107  | 10,203 | 11,856 | 131,475 |
| 1931-32              | 17,454 | 11,919 | 11,729 | 15,563 | 13,550 | 12,100 | 8,134  | 7,995  | 8,554  | 11,882 | 8,831  | 8,086  | 135,797 |
| 1932-33              | 4,841  | 5,613  | 4,226  | 4,422  | 5,985  | 3,549  | 3,313  | 2,175  | 2,105  | 1,754  | 1,523  | 1,705  | 41,211  |
| 1933-34 <sup>1</sup> | 1,861  | 1,721  | 1,530  | 1,490  | 1,930  | 5,976  | 4,570  | 4,039  | 4,733  | 5,482  | 2,725  | 1,415  | 37,001  |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; compiled from Monthly Summary of Foreign Commerce of the United States.

The following factor has been used for converting flour into terms of wheat: 1 barrel of flour = the product of 4.7 bushels of grain.

TABLE 14.—Wheat: Receipts inspected, all inspection points, United States, by months, 1925-26 to 1934-35

| Year    | July             | Aug.             | Sept.            | Oct.             | Nov.             | Dec.             | Jan.             | Feb.             | Mar.             | Apr.             | May              | June             | Total            |
|---------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|         | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels |
| 1925-26 | 74,414           | 79,444           | 89,240           | 51,953           | 60,289           | 55,907           | 53,716           | 51,781           | 27,681           | 26,634           | 30,733           | 46,151           | 607,942          |
| 1926-27 | 103,040          | 142,838          | 86,534           | 72,182           | 55,067           | 44,737           | 45,194           | 47,062           | 42,770           | 37,169           | 43,077           | 46,221           | 840,866          |
| 1927-28 | 111,097          | 127,877          | 136,744          | 112,301          | 79,464           | 53,284           | 46,724           | 43,385           | 47,274           | 35,426           | 41,124           | 26,450           | 859,250          |
| 1928-29 | 161,267          | 139,714          | 127,237          | 130,017          | 81,352           | 68,185           | 46,115           | 53,800           | 49,812           | 34,910           | 40,499           | 62,723           | 989,731          |
| 1929-30 | 234,335          | 171,098          | 92,048           | 64,384           | 36,869           | 45,790           | 32,973           | 40,215           | 28,723           | 25,327           | 34,265           | 62,466           | 867,993          |
| 1930-31 | 221,083          | 153,923          | 95,619           | 54,806           | 38,532           | 44,049           | 53,826           | 62,491           | 48,072           | 37,020           | 52,869           | 62,660           | 914,950          |
| 1931-32 | 219,167          | 114,427          | 69,868           | 64,505           | 49,838           | 33,340           | 38,989           | 55,105           | 27,238           | 28,809           | 34,642           | 37,960           | 774,408          |
| 1932-33 | 112,764          | 85,520           | 71,789           | 46,244           | 32,003           | 28,071           | 25,477           | 19,592           | 22,970           | 30,539           | 45,232           | 66,641           | 586,842          |
| 1933-34 | 94,212           | 52,980           | 42,772           | 30,183           | 26,925           | 24,338           | 24,824           | 24,591           | 24,327           | 20,564           | 23,680           | 73,381           | 462,777          |
| 1934-35 | 113,524          | 62,722           | 40,054           | 26,660           | 20,997           | 18,872           | -----            | -----            | -----            | -----            | -----            | -----            | -----            |

Bureau of Agricultural Economics. Compiled from reports of licensed inspectors through district offices of Federal grain inspection. The quantity loaded per car varies, but car-lot receipts have been converted to bushels by using conversion factors for crop years as follows: 1925-26, 1,368; 1926-27, 1,380; 1927-28, 1,399; 1928-29, 1,441; 1929-30, 1,455; 1930-31, 1,477; 1931-32, 1,485; 1932-33, 1,479; 1933-34 and 1934-35, 1,500 bushels per car, respectively.

TABLE 15.—Wheat: Receipts inspected, all inspection points, United States, by classes and grades, 1929-30 to 1933-34

| Class and year beginning July | Grade            |                  |                  |                  |                  |                  | Total            |
|-------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|                               | No. 1            | No. 2            | No. 3            | No. 4            | No. 5            | Sample           |                  |
|                               | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels |
| Hard red spring:              |                  |                  |                  |                  |                  |                  |                  |
| 1929-30                       | 85,142           | 27,409           | 14,971           | 3,088            | 1,097            | 6,270            | 137,977          |
| 1930-31                       | 87,418           | 29,508           | 30,850           | 10,742           | 2,593            | 1,059            | 162,479          |
| 1931-32                       | 20,809           | 10,503           | 10,428           | 3,130            | 1,679            | 603              | 47,057           |
| 1932-33                       | 61,985           | 20,349           | 29,066           | 5,496            | 1,167            | 808              | 127,901          |
| 1933-34                       | 62,685           | 14,237           | 11,728           | 2,208            | 1,002            | 952              | 92,812           |
| Durum:                        |                  |                  |                  |                  |                  |                  |                  |
| 1929-30                       | 4,858            | 22,676           | 4,707            | 2,120            | 1,409            | 985              | 36,755           |
| 1930-31                       | 8,516            | 32,562           | 4,616            | 1,663            | 579              | 349              | 48,285           |
| 1931-32                       | 1,286            | 8,503            | 1,268            | 374              | 153              | 73               | 11,687           |
| 1932-33                       | 3,235            | 11,740           | 1,534            | 413              | 180              | 86               | 17,188           |
| 1933-34                       | 3,585            | 7,285            | 306              | 72               | 66               | 172              | 11,496           |
| Hard red winter:              |                  |                  |                  |                  |                  |                  |                  |
| 1929-30                       | 110,932          | 226,191          | 123,928          | 38,070           | 12,865           | 14,575           | 526,561          |
| 1930-31                       | 237,604          | 193,528          | 51,537           | 22,161           | 12,027           | 7,957            | 524,814          |
| 1931-32                       | 261,155          | 229,722          | 52,195           | 12,859           | 9,942            | 7,135            | 573,008          |
| 1932-33                       | 96,125           | 145,624          | 45,710           | 13,687           | 10,437           | 6,542            | 318,125          |
| 1933-34                       | 81,954           | 85,604           | 20,421           | 4,378            | 5,034            | 4,719            | 202,110          |
| Soft red winter:              |                  |                  |                  |                  |                  |                  |                  |
| 1929-30                       | 5,522            | 28,879           | 22,013           | 4,596            | 1,085            | 1,913            | 64,008           |
| 1930-31                       | 40,728           | 14,358           | 2,768            | 693              | 445              | 449              | 59,431           |
| 1931-32                       | 17,870           | 38,357           | 12,994           | 3,593            | 1,414            | 1,488            | 75,656           |
| 1932-33                       | 14,385           | 26,156           | 5,648            | 1,056            | 1,275            | 1,294            | 49,774           |
| 1933-34                       | 13,849           | 32,564           | 6,982            | 1,445            | 870              | 1,051            | 56,761           |
| White:                        |                  |                  |                  |                  |                  |                  |                  |
| 1929-30                       | 14,659           | 25,502           | 4,105            | 538              | 147              | 387              | 45,338           |
| 1930-31                       | 13,891           | 29,668           | 5,819            | 645              | 145              | 285              | 49,906           |
| 1931-32                       | 18,632           | 21,273           | 5,267            | 491              | 94               | 40               | 45,551           |
| 1932-33                       | 8,192            | 17,177           | 6,877            | 1,239            | 284              | 371              | 34,140           |
| 1933-34                       | 11,172           | 35,670           | 11,811           | 1,650            | 258              | 494              | 61,045           |
| Mixed:                        |                  |                  |                  |                  |                  |                  |                  |
| 1929-30                       | 12,520           | 23,153           | 12,820           | 4,381            | 2,324            | 2,156            | 57,354           |
| 1930-31                       | 25,100           | 26,800           | 9,702            | 5,206            | 2,034            | 1,193            | 70,030           |
| 1931-32                       | 9,670            | 10,042           | 4,581            | 992              | 563              | 301              | 26,149           |
| 1932-33                       | 10,613           | 18,103           | 6,337            | 1,707            | 1,229            | 725              | 39,714           |
| 1933-34                       | 14,198           | 17,246           | 4,533            | 844              | 794              | 938              | 38,553           |
| Total:                        |                  |                  |                  |                  |                  |                  |                  |
| 1929-30                       | 233,633          | 353,810          | 182,544          | 52,793           | 18,927           | 26,286           | 867,993          |
| 1930-31                       | 412,757          | 326,424          | 105,291          | 41,110           | 18,126           | 11,242           | 914,950          |
| 1931-32                       | 324,422          | 318,405          | 85,763           | 21,379           | 13,745           | 9,694            | 774,408          |
| 1932-33                       | 194,535          | 249,149          | 95,202           | 23,598           | 14,572           | 9,786            | 586,842          |
| 1933-34                       | 187,443          | 192,616          | 55,781           | 10,597           | 8,024            | 8,316            | 462,777          |

Bureau of Agricultural Economics. Compiled from reports of licensed inspectors through district offices of Federal grain inspection. See 1927 Yearbook, table 15, and 1928 Yearbook, table 15, for data for earlier years. The quantity loaded per car varies, but car-lot receipts have been converted to bushels by using the following conversion factors: 1929-30, 1,455; 1930-31, 1,477; 1931-32, 1,485; 1932-33, 1,479; and 1933-34, 1,500 bushels per car, respectively.

TABLE 16.—Wheat: Commercial stocks, 1926-27 to 1934-35

DOMESTIC WHEAT IN UNITED STATES <sup>1</sup>

| Year    | July             | Aug.             | Sept.            | Oct.             | Nov.             | Dec.             | Jan.             | Feb.             | Mar.             | Apr.             | May              | June             |
|---------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|         | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels |
| 1926-27 |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| 1927-28 | 21,052           | 33,677           | 62,042           | 78,811           | 89,684           | 91,589           | 88,581           | 78,203           | 72,858           | 68,701           | 61,957           | 48,286           |
| 1928-29 | 85,557           | 63,133           | 93,870           | 115,469          | 139,493          | 140,172          | 144,351          | 128,646          | 128,377          | 124,756          | 113,892          | 96,059           |
| 1929-30 | 90,442           | 136,423          | 186,947          | 193,211          | 202,461          | 189,926          | 182,226          | 168,346          | 160,674          | 153,122          | 135,471          | 120,303          |
| 1930-31 | 109,327          | 161,897          | 201,319          | 220,600          | 211,831          | 206,618          | 199,649          | 202,694          | 208,651          | 213,583          | 206,490          | 209,110          |
| 1931-32 | 203,967          | 235,727          | 261,742          | 256,327          | 244,043          | 236,616          | 226,874          | 217,719          | 216,282          | 207,215          | 186,549          | 176,237          |
| 1932-33 | 163,405          | 175,918          | 188,342          | 194,558          | 191,829          | 176,428          | 168,465          | 155,552          | 147,132          | 135,552          | 124,395          | 117,536          |
| 1933-34 | 123,712          | 134,946          | 151,738          | 156,652          | 151,294          | 142,187          | 132,511          | 116,472          | 107,233          | 97,132           | 88,821           | 78,967           |
| 1934-35 | 80,548           | 115,922          | 122,380          | 120,075          | 108,518          | 99,158           |                  |                  |                  |                  |                  |                  |

UNITED STATES WHEAT IN CANADA <sup>2</sup>

| Year    | July             | Aug.             | Sept.            | Oct.             | Nov.             | Dec.             | Jan.             | Feb.             | Mar.             | Apr.             | May              | June             |
|---------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|         | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels |
| 1926-27 |                  |                  |                  |                  |                  |                  | 1,067            | 549              | 437              | 378              | 746              | 1,844            |
| 1927-28 | 1,862            | 1,260            | 4,249            | 4,560            | 7,258            | 5,156            | 3,933            | 2,265            | 1,680            | 977              | 863              | 2,314            |
| 1928-29 | 2,506            | 2,258            | 2,546            | 3,295            | 8,602            | 8,280            | 7,328            | 3,930            | 2,189            | 1,586            | 1,735            | 4,855            |
| 1929-30 | 3,532            | 2,288            | 4,450            | 8,658            | 9,065            | 9,101            | 8,161            | 7,517            | 6,613            | 5,960            | 5,431            | 4,859            |
| 1930-31 | 4,729            | 3,961            | 3,812            | 5,678            | 4,756            | 4,790            | 4,819            | 4,802            | 4,951            | 5,254            | 5,897            | 7,851            |
| 1931-32 | 15,847           | 22,934           | 32,236           | 32,511           | 31,627           | 29,414           | 29,153           | 23,652           | 27,682           | 27,578           | 26,872           | 17,461           |
| 1932-33 | 15,895           | 15,364           | 11,334           | 8,503            | 7,723            | 7,000            | 6,938            | 6,742            | 6,854            | 6,403            | 5,384            | 4,782            |
| 1933-34 | 4,047            | 3,740            | 3,672            | 3,114            | 2,656            | 2,251            | 2,249            | 2,249            | 2,235            | 2,229            | 2,225            |                  |
| 1934-35 |                  |                  |                  | 849              | 1,049            | 1,049            |                  |                  |                  |                  |                  |                  |

CANADIAN WHEAT IN CANADA <sup>3</sup>

| Year    | July    | Aug.    | Sept.   | Oct.    | Nov.    | Dec.    | Jan.    | Feb.    | Mar.    | Apr.    | May     | June    |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1926-27 |         |         |         |         |         |         | 101,309 | 107,835 | 110,602 | 102,223 | 67,856  | 51,744  |
| 1927-28 | 38,974  | 36,524  | 21,706  | 28,909  | 61,831  | 92,487  | 122,678 | 136,938 | 139,028 | 131,334 | 121,195 | 98,041  |
| 1928-29 | 82,781  | 51,832  | 26,964  | 85,804  | 140,441 | 149,054 | 179,805 | 176,196 | 169,379 | 164,229 | 133,397 | 115,126 |
| 1929-30 | 94,939  | 82,766  | 81,348  | 145,739 | 188,009 | 187,784 | 191,139 | 184,534 | 178,689 | 170,688 | 157,612 | 128,020 |
| 1930-31 | 110,202 | 85,463  | 64,287  | 140,943 | 167,287 | 177,000 | 185,017 | 175,741 | 172,689 | 169,407 | 153,088 | 126,601 |
| 1931-32 | 107,881 | 109,193 | 96,449  | 114,566 | 152,868 | 169,088 | 172,681 | 173,593 | 171,191 | 170,447 | 159,982 | 138,616 |
| 1932-33 | 134,040 | 116,767 | 110,818 | 187,252 | 225,518 | 221,997 | 223,816 | 219,866 | 215,785 | 219,557 | 217,309 | 196,352 |
| 1933-34 | 194,776 | 189,926 | 194,055 | 220,467 | 241,245 | 223,601 | 227,645 | 224,015 | 221,065 | 218,327 | 207,355 | 195,231 |
| 1934-35 | 181,589 | 177,623 | 183,706 | 214,173 | 235,969 | 231,152 |         |         |         |         |         |         |

CANADIAN WHEAT IN UNITED STATES <sup>4</sup>

| Year    | July   | Aug.   | Sept.  | Oct.   | Nov.   | Dec.   | Jan.   | Feb.   | Mar.   | Apr.   | May    | June   |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1926-27 |        |        |        |        |        |        | 23,394 | 14,500 | 9,532  | 6,650  | 10,724 | 14,466 |
| 1927-28 | 7,472  | 4,835  | 3,410  | 3,784  | 8,617  | 31,375 | 35,764 | 25,649 | 19,260 | 11,848 | 6,597  | 11,549 |
| 1928-29 | 11,132 | 13,610 | 3,769  | 7,548  | 18,291 | 33,902 | 46,717 | 38,327 | 32,851 | 23,854 | 28,772 | 25,538 |
| 1929-30 | 23,196 | 23,550 | 22,025 | 21,753 | 28,316 | 34,527 | 38,000 | 35,517 | 31,516 | 25,285 | 17,582 | 14,372 |
| 1930-31 | 16,435 | 16,468 | 12,603 | 17,763 | 22,112 | 30,297 | 32,266 | 26,954 | 18,083 | 11,554 | 2,766  | 5,926  |
| 1931-32 | 6,021  | 6,244  | 6,227  | 9,116  | 12,596 | 23,480 | 25,212 | 21,905 | 14,589 | 11,426 | 4,619  | 5,035  |
| 1932-33 | 4,532  | 4,707  | 5,381  | 10,988 | 13,917 | 15,197 | 13,575 | 10,996 | 7,792  | 5,992  | 2,497  | 4,609  |
| 1933-34 | 4,837  | 6,697  | 4,785  | 5,752  | 10,016 | 14,767 | 14,038 | 9,798  | 6,171  | 5,053  | 1,519  | 5,253  |
| 1934-35 | 10,121 | 9,727  | 10,103 | 14,221 | 17,576 | 23,569 |        |        |        |        |        |        |

<sup>1</sup>Includes domestic wheat in store in public and private elevators in 41 markets and wheat afloat in vessels or barges in harbors of lake and seaboard ports. Does not include wheat in transit either by rail or water, stocks in mills, or mill elevators attached to mills, or private stocks of wheat intended for local use.

<sup>2</sup>Includes United States wheat in store at 15 Canadian points or afloat in vessels or barges in the harbors of lake and seaboard ports. Does not include wheat in transit to Canadian ports.

<sup>3</sup>Includes practically all Canadian wheat held within Canadian boundaries, exclusive of farm and certain mill stocks.

<sup>4</sup>Includes Canadian wheat in store and afloat at 10 United States lake and seaboard ports but not Canadian wheat in transit on lakes or canals.

Bureau of Agricultural Economics. Compiled from weekly reports to the grain, hay, and feed market news service. Data for domestic and Canadian wheat in United States are for stocks on the Saturday nearest the 1st day of the month; for Canadian and United States wheat in Canada data are for stocks on the Friday nearest the 1st day of the month.

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TABLE 17.—Wheat, including flour: Supply, distribution, and disappearance in continental United States, 1919-20 to 1934-35

| Crop year beginning July | Supply                |   |                                |  |  |                      |                                      |                       |                                       |               |
|--------------------------|-----------------------|---|--------------------------------|--|--|----------------------|--------------------------------------|-----------------------|---------------------------------------|---------------|
|                          | Stocks July 1         |   |                                |  |  |                      |                                      | New crop <sup>1</sup> | Imports (flour included) <sup>2</sup> | Total supply  |
|                          | On farms <sup>1</sup> | In country elevators and mills <sup>3</sup> | Commercial stocks <sup>3</sup> | In merchant mills and elevators and stored for others <sup>4</sup> | In transit to merchant mills and bought to arrive <sup>4</sup> | Total wheat as grain | Flour in terms of wheat <sup>5</sup> |                       |                                       |               |
|                          | 1,000 bushels         | 1,000 bushels                               | 1,000 bushels                  | 1,000 bushels  | 1,000 bushels  | 1,000 bushels        | 1,000 bushels                        | 1,000 bushels         | 1,000 bushels                         | 1,000 bushels |
| 1919-20.....             | 18,756                | 19,672                                      | 10,873                         | 21,000   | 6,400  | 76,701               | 7,402                                | 952,097               | 5,511                                 | 1,041,711     |
| 1920-21.....             | 48,677                | 37,304                                      | 23,404                         | 26,000   | 9,500  | 144,885              | 10,502                               | 843,277               | 57,682                                | 1,056,346     |
| 1921-22.....             | 57,063                | 27,167                                      | 9,966                          | 22,000   | 10,600   | 126,796              | 6,947                                | 818,964               | 17,375                                | 970,082       |
| 1922-23.....             | 32,519                | 28,756                                      | 20,342                         | 25,000   | 7,700  | 114,317              | 7,793                                | 846,649               | 20,031                                | 988,790       |
| 1923-24.....             | 35,239                | 37,117                                      | 29,403                         | 28,000   | 7,200  | 136,959              | 10,495                               | 759,482               | 28,079                                | 935,015       |
| 1924-25.....             | 29,349                | 36,626                                      | 38,597                         | 30,000   | 9,800  | 144,372              | 9,616                                | 840,091               | 6,201                                 | 1,000,286     |
| 1925-26.....             | 28,638                | 25,287                                      | 29,285                         | 22,576   | 9,000  | 114,786              | 8,530                                | 669,142               | 15,679                                | 808,137       |
| 1926-27.....             | 27,104                | 29,501                                      | 16,486                         | 24,505   | 7,350  | 104,946              | 9,757                                | 833,544               | 13,264                                | 961,511       |
| 1927-28.....             | 26,743                | 21,776                                      | 25,516                         | 37,033   | 11,274   | 122,347              | 9,076                                | 874,733               | 15,734                                | 1,021,890     |
| 1928-29.....             | 19,567                | 19,277                                      | 42,208                         | 31,920   | 10,893   | 123,865              | 9,019                                | 912,961               | 21,442                                | 1,067,287     |
| 1929-30.....             | 44,979                | 41,546                                      | 95,684                         | 48,279   | 16,227   | 246,725              | 13,541                               | 822,180               | 12,956                                | 1,095,402     |
| 1930-31.....             | 60,092                | 60,166                                      | 109,327                        | 59,170   | 14,706   | 303,461              | 20,497                               | 889,702               | 19,366                                | 1,233,026     |
| 1931-32.....             | 38,039                | 30,252                                      | 203,967                        | 41,206   | 12,496   | 325,960              | 6,886                                | 932,221               | 12,886                                | 1,277,953     |
| 1932-33.....             | 92,772                | 41,585                                      | 188,405                        | 71,714   | 10,088   | 384,564              | 7,041                                | 745,788               | 9,382                                 | 1,146,775     |
| 1933-34.....             | 82,309                | 64,296                                      | 123,596                        | 107,062  | 16,038   | 393,291              | 7,214                                | 528,975               | 11,494                                | 940,974       |
| 1934-35.....             | 60,323                | 51,060                                      | 80,548                         | 83,114   | 14,066   | 289,111              | 6,688                                | 496,469               | -----                                 | -----         |

| Crop year beginning July | Distribution                      |  |   |               |                                |  |   |                                |                                |                         |
|--------------------------|-----------------------------------|--|---|---------------|--------------------------------|--|---|--------------------------------|--------------------------------|-------------------------|
|                          | Exports and shipments             |  |   |               | Seed requirements <sup>7</sup> | Disappearance for food, feed, and loss | Carry-over (including flour) June 30 <sup>8</sup> | Population Jan. 1 <sup>9</sup> | Per capita disappearance       |                         |
|                          | Exports (wheat only) <sup>6</sup> | Exports in terms of wheat <sup>6</sup> | Reexports and shipments (flour included) <sup>6</sup> | Total         |                                |  |   |                                | Wheat for food, feed, and loss | Flour in terms of wheat |
|                          | 1,000 bushels                     | 1,000 bushels                          | 1,000 bushels   | 1,000 bushels | 1,000 bushels                  | 1,000 bushels                          | 1,000 bushels                                     | Thousands                      | Bushels                        | Bushels                 |
| 1919-20.....             | 122,431                           | 99,599                                 | 3,130   | 225,160       | 90,172                         | 570,992                                | 155,387   | 105,711                        | 5.40                           | -----                   |
| 1920-21.....             | 293,268                           | 76,045                                 | 3,690   | 373,003       | 88,408                         | 461,192                                | 133,743   | 107,375                        | 4.30                           | -----                   |
| 1921-22.....             | 208,321                           | 74,245                                 | 3,087   | 285,653       | 88,322                         | 473,997                                | 122,110   | 109,040                        | 4.35                           | -----                   |
| 1922-23.....             | 154,951                           | 69,949                                 | 3,117   | 228,017       | 84,432                         | 528,887                                | 147,454   | 110,705                        | 4.78                           | -----                   |
| 1923-24.....             | 78,793                            | 81,087                                 | 3,064   | 162,944       | 73,514                         | 544,569                                | 153,988   | 112,370                        | 4.85                           | 4.28                    |
| 1924-25.....             | 195,490                           | 65,313                                 | 2,964   | 263,767       | 80,951                         | 532,246                                | 128,316   | 114,035                        | 4.67                           | 4.30                    |
| 1925-26.....             | 63,189                            | 44,846                                 | 3,054   | 111,089       | 79,540                         | 502,805                                | 114,703   | 115,700                        | 4.40                           | 4.31                    |
| 1926-27.....             | 156,250                           | 62,910                                 | 3,180   | 222,340       | 85,065                         | 522,663                                | 131,423   | 117,364                        | 4.45                           | 4.31                    |
| 1927-28.....             | 145,999                           | 60,260                                 | 2,743   | 209,002       | 91,416                         | 588,558                                | 132,884   | 119,029                        | 4.94                           | 4.21                    |
| 1928-29.....             | 103,114                           | 60,573                                 | 3,227   | 166,914       | 84,577                         | 555,330                                | 260,266   | 120,694                        | 4.60                           | 4.28                    |
| 1929-30.....             | 92,173                            | 61,070                                 | 3,049   | 156,294       | 83,930                         | 543,720                                | 311,458   | 122,359                        | 4.44                           | 4.11                    |
| 1930-31.....             | 76,355                            | 55,110                                 | 2,870   | 134,345       | 81,080                         | 634,775                                | 332,846   | 123,630                        | 5.54                           | 4.21                    |
| 1931-32.....             | 96,521                            | 39,276                                 | 3,631   | 139,458       | 80,098                         | 666,792                                | 391,605   | 124,511                        | 5.36                           | 4.04                    |
| 1932-33.....             | 20,887                            | 20,324                                 | 3,479   | 44,690        | 82,922                         | 618,658                                | 400,505   | 125,197                        | 4.94                           | 4.11                    |
| 1933-34.....             | 18,799                            | 18,202                                 | 2,800   | 39,801        | 76,181                         | 529,193                                | 295,799   | 126,059                        | 4.20                           | 3.71                    |

<sup>1</sup> Based on returns to the Bureau from crop reporters.

<sup>2</sup> Based on returns from about 3,500 country mills and elevators.

<sup>3</sup> From Bradstreets, 1919-20 to 1929-30; Bureau of Agricultural Economics, 1930-31 to end of table.

<sup>4</sup> 1919-20 to 1924-25, estimates in absence of actual figures; 1925-26 to date, Bureau of the Census figures raised to represent all merchant mills. Stocks stored for others included beginning July 1930.

<sup>5</sup> From Chicago Daily Trade Bulletin.

<sup>6</sup> From Reports of Foreign and Domestic Commerce of the United States; shipments are to Alaska Hawaii, and Puerto Rico.

<sup>7</sup> Amount of seed used per acre from returns to the Bureau from inquiries sent to crop reporters.

<sup>8</sup> For individual items see supply section.

<sup>9</sup> Bureau of the Census.

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TABLE 18.—Wheat: Average price per bushel received by producers, United States, 1925-26 to 1934-35

| Year    | July 15     | Aug. 15     | Sept. 15    | Oct. 15     | Nov. 15     | Dec. 15     | Jan. 15     | Feb. 15     | Mar. 15     | Apr. 15     | May 15      | June 15     | Weighted average |
|---------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------------|
| 1925-26 | Cents 140.3 | Cents 150.4 | Cents 144.4 | Cents 136.4 | Cents 148.8 | Cents 153.7 | Cents 158.1 | Cents 155.5 | Cents 146.0 | Cents 142.2 | Cents 142.1 | Cents 138.9 | Cents 143.7      |
| 1926-27 | 127.7       | 125.1       | 117.7       | 121.4       | 123.6       | 122.8       | 122.2       | 122.8       | 120.9       | 117.2       | 123.2       | 130.1       | 121.7            |
| 1927-28 | 127.3       | 123.5       | 119.2       | 113.7       | 111.4       | 113.9       | 115.2       | 116.2       | 121.6       | 129.2       | 144.3       | 132.0       | 119.0            |
| 1928-29 | 118.1       | 95.2        | 94.4        | 98.7        | 97.1        | 98.2        | 98.5        | 104.2       | 104.7       | 99.8        | 90.1        | 86.8        | 99.8             |
| 1929-30 | 102.4       | 110.7       | 112.1       | 111.5       | 103.4       | 108.1       | 107.5       | 101.3       | 91.9        | 93.4        | 87.5        | 87.9        | 103.4            |
| 1930-31 | 70.6        | 74.0        | 70.3        | 65.6        | 60.0        | 61.8        | 59.1        | 58.7        | 58.3        | 59.2        | 59.9        | 51.9        | 67.0             |
| 1931-32 | 36.3        | 35.4        | 35.7        | 36.1        | 50.5        | 44.1        | 44.0        | 44.2        | 43.1        | 42.4        | 37.3        | 39.0        | 39.0             |
| 1932-33 | 35.6        | 38.5        | 37.4        | 34.6        | 32.8        | 31.6        | 32.9        | 32.3        | 34.5        | 44.8        | 59.0        | 58.7        | 37.9             |
| 1933-34 | 86.9        | 74.7        | 71.1        | 63.6        | 71.1        | 67.3        | 69.4        | 72.0        | 70.9        | 68.7        | 69.5        | 78.9        | 74.1             |
| 1934-35 | 78.8        | 80.6        | 92.2        | 88.5        | 88.1        | 90.6        | —           | —           | —           | —           | —           | —           | 88.0             |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 Yearbook, table 21. Only monthly prices are comparable.

TABLE 19.—Wheat: Average price per bushel of specified grades at markets named, 1900-1901 to 1933-34

| Crop year beginning July— | No. 1 Northern Spring at Minneapolis | No. 2 Amber Durum at Minneapolis | No. 2 Hard Winter at Chicago | No. 2 Hard Winter at Kansas City | No. 2 Red Winter at St. Louis | No. 2 Hard Winter at New York <sup>1</sup> | Imported red at Liverpool <sup>2</sup> |
|---------------------------|--------------------------------------|----------------------------------|------------------------------|----------------------------------|-------------------------------|--|--|
|                           | Cents                                | Cents                            | Cents                        | Cents                            | Cents                         | Cents                                      | Cents                                  |
| 1900-1901                 | 75                                   | —                                | 72                           | 67                               | 74                            | 84   | 87                                     |
| 1901-2                    | 72                                   | —                                | 71                           | 68                               | 72                            | 82   | 87                                     |
| 1902-3                    | 74                                   | —                                | 73                           | 68                               | 71                            | 85   | 89                                     |
| 1903-4                    | 89                                   | 69                               | 81                           | 77                               | 87                            | 93   | 90                                     |
| 1904-5                    | 113                                  | 92                               | 101                          | 97                               | 103                           | 120  | 95                                     |
| 1905-6                    | 84                                   | 70                               | 80                           | 80                               | 90                            | 96   | 96                                     |
| 1906-7                    | 83                                   | 64                               | 76                           | 72                               | 76                            | 92   | 98                                     |
| 1907-8                    | 107                                  | 85                               | 96                           | 93                               | 94                            | 116  | 110                                    |
| 1908-9                    | 111                                  | 95                               | 109                          | 99                               | 104                           | 122  | 120                                    |
| 1909-10                   | 109                                  | 90                               | 109                          | 107                              | 113                           | 120  | 120                                    |
| 1910-11                   | 105                                  | 87                               | 100                          | 98                               | 99                            | 104  | 107                                    |
| 1911-12                   | 107                                  | 93                               | 94                           | 97                               | 94                            | 110  | 112                                    |
| 1912-13                   | 87                                   | 85                               | 94                           | 88                               | 105                           | 103  | 114                                    |
| 1913-14                   | 88                                   | 83                               | 89                           | 84                               | 80                            | 99   | 106                                    |
| 1914-15                   | 120                                  | 122                              | 111                          | 105                              | 110                           | 138  | 157                                    |
| 1915-16                   | 109                                  | 104                              | 114                          | 119                              | 120                           | 128  | 175                                    |
| 1916-17                   | 176                                  | 180                              | 157                          | 71                               | 163                           | 208  | 224                                    |
| 1917-18                   | 220                                  | 218                              | 228                          | 252                              | 223                           | 240  | 235                                    |
| 1918-19                   | 225                                  | 222                              | 234                          | 219                              | 223                           | 237  | 240                                    |
| 1919-20                   | 272                                  | 249                              | 227                          | 242                              | 230                           | 255  | 215                                    |
| 1920-21                   | 207                                  | 200                              | 216                          | 183                              | 213                           | 210  | 223                                    |
| 1921-22                   | 143                                  | 119                              | 128                          | 120                              | 127                           | 135  | 151                                    |
| 1922-23                   | 120                                  | 107                              | 113                          | 113                              | 121                           | 131  | 144                                    |
| 1923-24                   | 117                                  | 106                              | 106                          | 105                              | 107                           | 121  | 127                                    |
| 1924-25                   | 156                                  | 156                              | 139                          | 135                              | 159                           | 170  | 181                                    |
| 1925-26                   | 161                                  | 144                              | 161                          | 163                              | 169                           | 180  | 176                                    |
| 1926-27                   | 146                                  | 155                              | 140                          | 135                              | 138                           | 156  | 163                                    |
| 1927-28                   | 136                                  | 132                              | 138                          | 135                              | 149                           | 153  | 152                                    |
| 1928-29                   | 118                                  | 113                              | 117                          | 112                              | 139                           | 131  | 128                                    |
| 1929-30                   | 133                                  | 119                              | 130                          | 120                              | 130                           | 126  | 129                                    |
| 1930-31                   | 83                                   | 78                               | 84                           | 76                               | 88                            | 92   | 80                                     |
| 1931-32                   | 68                                   | 76                               | 53                           | 47                               | 52                            | 68   | 59                                     |
| 1932-33                   | 60                                   | 53                               | 53                           | 51                               | 55                            | 69   | 54                                     |
| 1933-34                   | 94                                   | 103                              | 94                           | 88                               | 94                            | 106  | 68                                     |

<sup>1</sup> 1900-1901 to 1908-9, averages of monthly high and low, from Annual Statistical Report, New York Produce Exchange, of No. 1 Northern Spring; 1909-10 to 1933-34, averages of daily closing prices in the cash market, from New York Journal of Commerce.

<sup>2</sup> Compiled from Broomhall's Yearbooks and Corn Trade News. 1900-1901 to 1925-26, imported red; 1926-27 to 1933-34, average of all parcels at Liverpool.

<sup>3</sup> Average for 6 months.

<sup>4</sup> Average for 10 months.

<sup>5</sup> Average for 11 months.

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The prices at Chicago, Minneapolis, Kansas City, and St. Louis are weighted averages. New York and Liverpool are simple averages. The weighted average prices are compiled from daily trade papers of markets named.

TABLE 20.—Wheat: Weighted average price per bushel of reported cash sales at Minneapolis, St. Louis, Kansas City, and six markets combined, 1925-26 to 1934-35

| Grade, market, and year                               | July  | Aug.  | Sept. | Oct.  | Nov.  | Dec.  | Jan.  | Feb.  | Mar.  | Apr.  | May   | June  | Weighted average |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------------|
| <b>No. 1 Dark North-ern Spring, Minneapolis:</b>      |       |       |       |       |       |       |       |       |       |       |       |       |                  |
| 1925-26   | 166   | 167   | 158   | 158   | 167   | 177   | 178   | 174   | 167   | 166   | 164   | 167   | 165              |
| 1926-27   | 175   | 156   | 148   | 153   | 148   | 143   | 147   | 146   | 143   | 141   | 153   | 157   | 151              |
| 1927-28   | 158   | 150   | 137   | 134   | 134   | 137   | 143   | 142   | 147   | 163   | 164   | 153   | 141              |
| 1928-29   | 147   | 124   | 126   | 123   | 124   | 122   | 129   | 136   | 132   | 129   | 121   | 123   | 126              |
| 1929-30   | 150   | 138   | 137   | 132   | 130   | 132   | 131   | 125   | 115   | 114   | 110   | 105   | 130              |
| 1930-31   | 96    | 92    | 87    | 83    | 75    | 77    | 77    | 76    | 76    | 80    | 82    | 76    | 82               |
| 1931-32   | 65    | 66    | 71    | 72    | 80    | 74    | 77    | 77    | 72    | 73    | 72    | 64    | 71               |
| 1932-33   | 59    | 59    | 59    | 54    | 50    | 49    | 51    | 50    | 54    | 65    | 76    | 81    | 61               |
| 1933-34   | 107   | 92    | 89    | 85    | 87    | 84    | 90    | 90    | 89    | 84    | 94    | 104   | 91               |
| 1934-35   | 108   | 120   | 121   | 115   | 114   | 117   |       |       |       |       |       |       |                  |
| <b>No. 2 Red Winter, St. Louis:</b>                   |       |       |       |       |       |       |       |       |       |       |       |       |                  |
| 1925-26   | 159   | 172   | 171   | 170   | 171   | 184   | 194   | 185   | 170   | 171   | 162   | 147   | 169              |
| 1926-27   | 142   | 134   | 136   | 140   | 136   | 137   | 138   | 135   | 130   | 129   | 142   | 150   | 138              |
| 1927-28   | 141   | 142   | 142   | 145   | 141   | 141   | 151   | 156   | 169   | 166   | 196   | 179   | 149              |
| 1928-29   | 147   | 138   | 145   | 144   | 145   | 139   | 142   | 140   | 135   | 125   | 117   | 121   | 139              |
| 1929-30   | 139   | 132   | 135   | 132   | 129   | 135   | 134   | 123   | 118   | 117   | 114   | 105   | 130              |
| 1930-31   | 85    | 80    | 88    | 87    | 83    | 83    | 78    | 79    | 78    | 50    | 79    | 72    | 83               |
| 1931-32   | 48    | 47    | 47    | 52    | 62    | 57    | 57    | 57    | 55    | 57    | 56    | 49    | 52               |
| 1932-33   | 47    | 53    | 54    | 50    | 47    | 46    | 50    | 49    | 55    | 69    | 81    | 82    | 55               |
| 1933-34   | 101   | 92    | 89    | 86    | 90    | 87    | 91    | 91    | 89    | 83    | 87    | 91    | 94               |
| 1934-35   | 92    | 101   | 104   | 100   | 101   | 104   |       |       |       |       |       |       |                  |
| <b>No. 2 Amber Durum, Minneapolis:</b>                |       |       |       |       |       |       |       |       |       |       |       |       |                  |
| 1925-26   | 164   | 150   | 130   | 129   | 143   | 156   | 157   | 151   | 144   | 149   | 147   | 150   | 144              |
| 1926-27   | 154   | 153   | 138   | 150   | 161   | 174   | 168   | 160   | 157   | 154   | 158   | 157   | 155              |
| 1927-28   | 153   | 140   | 128   | 128   | 128   | 133   | 130   | 129   | 133   | 141   | 140   | 131   | 132              |
| 1928-29   | 123   | 108   | 106   | 112   | 114   | 110   | 127   | 129   | 124   | 118   | 108   | 115   | 113              |
| 1929-30   | 135   | 127   | 128   | 125   | 119   | 123   | 119   | 111   | 97    | 99    | 97    | 88    | 119              |
| 1930-31   | 87    | 86    | 79    | 78    | 70    | 74    | 72    | 73    | 72    | 73    | 77    | 64    | 78               |
| 1931-32   | 61    | 73    | 73    | 79    | 87    | 84    | 87    | 86    | 78    | 72    | 67    | 56    | 76               |
| 1932-33   | 54    | 57    | 53    | 51    | 50    | 50    | 52    | 51    | 57    | 68    | 74    | 73    | 58               |
| 1933-34   | 108   | 102   | 100   | 97    | 100   | 97    | 111   | 109   | 110   | 97    | 109   | 112   | 103              |
| 1934-35   | 132   | 144   | 151   | 145   | 142   | 141   |       |       |       |       |       |       |                  |
| <b>No. 2 Hard Winter, Kansas City:</b>                |       |       |       |       |       |       |       |       |       |       |       |       |                  |
| 1925-26   | 154   | 164   | 158   | 158   | 163   | 172   | 178   | 171   | 161   | 159   | 155   | 153   | 163              |
| 1926-27   | 137   | 131   | 132   | 139   | 137   | 138   | 137   | 135   | 133   | 131   | 142   | 144   | 135              |
| 1927-28   | 136   | 135   | 131   | 128   | 131   | 132   | 133   | 133   | 133   | 152   | 160   | 147   | 135              |
| 1928-29   | 120   | 106   | 107   | 110   | 112   | 111   | 114   | 113   | 116   | 110   | 101   | 105   | 112              |
| 1929-30   | 125   | 123   | 124   | 122   | 119   | 121   | 119   | 113   | 102   | 101   | 99    | 89    | 120              |
| 1930-31   | 80    | 81    | 78    | 74    | 69    | 71    | 69    | 69    | 70    | 73    | 73    | 68    | 76               |
| 1931-32   | 44    | 43    | 43    | 48    | 59    | 52    | 53    | 54    | 51    | 53    | 54    | 46    | 47               |
| 1932-33   | 45    | 48    | 45    | 45    | 43    | 42    | 44    | 44    | 48    | 60    | 70    | 76    | 51               |
| 1933-34   | 68    | 90    | 87    | 83    | 84    | 80    | 84    | 85    | 82    | 78    | 86    | 89    | 88               |
| 1934-35   | 93    | 107   | 108   | 102   | 102   | 104   |       |       |       |       |       |       |                  |
| <b>6 markets, all classes and grades:<sup>1</sup></b> |       |       |       |       |       |       |       |       |       |       |       |       |                  |
| 1925-26   | 155.7 | 160.5 | 144.8 | 143.8 | 153.5 | 165.7 | 170.3 | 164.8 | 154.9 | 156.0 | 153.8 | 151.6 | 155.0            |
| 1926-27   | 141.6 | 135.3 | 135.6 | 130.4 | 137.7 | 139.5 | 138.8 | 136.2 | 133.6 | 134.7 | 145.1 | 148.6 | 138.3            |
| 1927-28   | 138.7 | 136.4 | 128.7 | 126.1 | 125.6 | 128.0 | 131.0 | 132.0 | 136.6 | 150.7 | 161.4 | 141.8 | 132.9            |
| 1928-29   | 126.0 | 109.4 | 108.9 | 107.0 | 109.1 | 107.4 | 113.7 | 118.1 | 114.2 | 109.2 | 101.1 | 105.3 | 110.6            |
| 1929-30   | 129.8 | 125.7 | 127.4 | 123.7 | 121.2 | 123.5 | 121.6 | 115.8 | 103.9 | 102.5 | 100.9 | 94.1  | 121.9            |
| 1930-31   | 82.6  | 84.7  | 79.0  | 76.0  | 69.8  | 72.5  | 71.4  | 70.9  | 71.4  | 74.5  | 75.5  | 66.8  | 77.1             |
| 1931-32   | 46.5  | 50.6  | 55.7  | 58.4  | 68.7  | 60.0  | 61.3  | 59.0  | 57.8  | 60.1  | 60.8  | 52.8  | 55.1             |
| 1932-33   | 47.6  | 55.1  | 55.1  | 51.2  | 48.8  | 40.1  | 48.4  | 47.9  | 53.1  | 64.4  | 73.4  | 77.7  | 57.0             |
| 1933-34   | 100.3 | 92.3  | 89.1  | 84.3  | 86.7  | 83.0  | 88.3  | 90.9  | 88.1  | 82.8  | 93.7  | 94.9  | 91.2             |
| 1934-35   | 94.6  | 114.7 | 119.2 | 113.8 | 113.2 | 112.2 |       |       |       |       |       |       |                  |

<sup>1</sup> Compiled from daily trade papers of markets named. The markets are Chicago, Minneapolis, Kansas City, St. Louis, Omaha, and Duluth. The prices in this section of the table are comparable with prices paid to producers in that the latter are averages of the several prices reported which cover all classes and grades sold by producers.

Bureau of Agricultural Economics; computed by weighting selling price by number of car lots sold, as reported in Minneapolis Daily Market Record, St. Louis Daily Market Reporter, and Kansas City Grain Market Review. Data for earlier years in 1928 Yearbook, table 22.

TABLE 21.—*Wheat, No. 3 Manitoba Northern: Average cash price per bushel at Winnipeg, in terms of United States money, 1925-26 to 1934-35*<sup>1</sup>

| Year    | July         | Aug.         | Sept.        | Oct.         | Nov.         | Dec.         | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | Average      |
|---------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|         | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> |
| 1925-26 | 153          | 160          | 132          | 120          | 136          | 149          | 146          | 144          | 138          | 146          | 144          | 144          | 143          |
| 1926-27 | 149          | 138          | 133          | 136          | 131          | 123          | 123          | 127          | 130          | 133          | 146          | 149          | 135          |
| 1927-28 | 153          | 145          | 131          | 127          | 124          | 124          | 123          | 124          | 131          | 141          | 142          | 130          | 133          |
| 1928-29 | 120          | 108          | 106          | 111          | 111          | 109          | 112          | 120          | 119          | 115          | 107          | 112          | 113          |
| 1929-30 | 152          | 152          | 144          | 134          | 126          | 130          | 123          | 110          | 100          | 103          | 104          | 98           | 123          |
| 1930-31 | 90           | 88           | 74           | 68           | 60           | 48           | 47           | 53           | 60           | 54           | 53           | 53           | 62           |
| 1931-32 | 49           | 46           | 43           | 45           | 52           | 43           | 44           | 43           | 49           | 50           | 49           | 43           | 47           |
| 1932-33 | 43           | 46           | 43           | 41           | 38           | 32           | 35           | 35           | 38           | 43           | 53           | 57           | 42           |
| 1933-34 | 75           | 65           | 61           | 54           | 60           | 55           | 59           | 61           | 62           | 61           | 65           | 72           | 62           |
| 1934-35 | 78           | 83           | 79           | 73           | 75           | 74           |              |              |              |              |              |              |              |

<sup>1</sup> Average of daily cash closing prices; basis, in store at Fort William and Port Arthur.

Bureau of Agricultural Economics.

Compiled as follows: July 1925-July 1928, Reports on the Grain Trade of Canada; August 1928 to latest date shown, Minneapolis Daily Market Record. Conversions at current rate of exchange September 1931 to end of table; par rate used July 1925-August 1931. Rates are monthly averages as reported by the Federal Reserve Board. Data for earlier years in 1930 Yearbook, table 22.

TABLE 22.—*Wheat: Average spot price per bushel of parcels of imported wheat at Liverpool, 1925-26 to 1934-35*

| Year    | July         | Aug.         | Sept.        | Oct.         | Nov.         | Dec.         | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | Total        |
|---------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|         | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> |
| 1925-26 | 168          | 172          | 159          | 148          | 164          | 185          | 181          | 175          | 161          | 171          | 173          | 169          | 169          |
| 1926-27 | 167          | 162          | 160          | 171          | 171          | 163          | 160          | 157          | 155          | 156          | 165          | 165          | 163          |
| 1927-28 | 161          | 160          | 151          | 149          | 147          | 148          | 149          | 146          | 151          | 159          | 155          | 147          | 152          |
| 1928-29 | 141          | 126          | 126          | 129          | 129          | 126          | 131          | 135          | 131          | 125          | 116          | 117          | 128          |
| 1929-30 | 141          | 142          | 137          | 136          | 127          | 141          | 140          | 125          | 117          | 120          | 115          | 110          | 129          |
| 1930-31 | 104          | 106          | 91           | 86           | 81           | 74           | 68           | 70           | 67           | 71           | 72           | 67           | 80           |
| 1931-32 | 62           | 53           | 53           | 58           | 67           | 57           | 56           | 60           | 64           | 64           | 61           | 55           | 59           |
| 1932-33 | 54           | 57           | 59           | 55           | 52           | 49           | 50           | 47           | 47           | 52           | 61           | 63           | 54           |
| 1933-34 | 79           | 67           | 73           | 60           | 68           | 65           | 69           | 66           | 67           | 68           | 67           | 67           | 68           |
| 1934-35 | 76           | 94           | 86           | 77           | 76           | 81           | 78           | 76           |              |              |              |              |              |

<sup>1</sup> Excluding German (on sample) quotations.

Bureau of Agricultural Economics. Parcels are less than cargo lots. Prices are per bushel of 60 pounds. Compiled from Broomhall's Corn Trade News. These are simple averages of daily sales prices of parcels at Liverpool. Conversions at par from January 1926 to August 1931, inclusive. Prior to January 1926, and beginning with September 1931, conversions were made at monthly average of current rates of exchange given in Federal Reserve Bulletins.

TABLE 23.—*Wheat: Volume of trading in futures at all contract markets, by months and crop years, 1924-25 to 1934-35*

| Year    | July                     | Aug.                     | Sept.                    | Oct.                     | Nov.                     | Dec.                     | Jan.                     | Feb.                     | Mar.                     | Apr.                     | May                      | June                     | Total                    |
|---------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|         | <i>Mil-lion bush-els</i> | <i>Mil-lion bush-els</i> | <i>Mil-lion bush-els</i> | <i>Mil-lion bush-els</i> | <i>Mil-lion bush-els</i> | <i>Mil-lion bush-els</i> | <i>Mil-lion bush-els</i> | <i>Mil-lion bush-els</i> | <i>Mil-lion bush-els</i> | <i>Mil-lion bush-els</i> | <i>Mil-lion bush-els</i> | <i>Mil-lion bush-els</i> | <i>Mil-lion bush-els</i> |
| 1924-25 | 1,333                    | 1,300                    | 1,068                    | 1,596                    | 1,340                    | 1,528                    | 1,908                    | 1,781                    | 2,273                    | 1,482                    | 1,508                    | 1,759                    | 18,876                   |
| 1925-26 | 1,490                    | 1,561                    | 1,475                    | 1,573                    | 1,500                    | 2,349                    | 1,456                    | 1,284                    | 1,864                    | 1,397                    | 1,222                    | 1,204                    | 18,345                   |
| 1926-27 | 1,438                    | 1,226                    | 1,156                    | 1,090                    | 1,227                    | 972                      | 704                      | 581                      | 920                      | 846                      | 1,260                    | 1,164                    | 12,584                   |
| 1927-28 | 1,018                    | 1,144                    | 923                      | 918                      | 638                      | 543                      | 384                      | 508                      | 923                      | 1,590                    | 1,471                    | 941                      | 11,201                   |
| 1928-29 | 996                      | 1,133                    | 818                      | 916                      | 750                      | 517                      | 1,085                    | 892                      | 1,083                    | 1,361                    | 1,253                    | 1,391                    | 12,195                   |
| 1929-30 | 2,889                    | 2,265                    | 1,401                    | 1,738                    | 1,805                    | 1,608                    | 1,334                    | 1,484                    | 1,201                    | 1,501                    | 1,004                    | 1,377                    | 19,067                   |
| 1930-31 | 1,306                    | 1,531                    | 1,216                    | 1,180                    | 1,094                    | 629                      | 347                      | 269                      | 433                      | 706                      | 635                      | 737                      | 10,603                   |
| 1931-32 | 677                      | 647                      | 519                      | 925                      | 1,479                    | 864                      | 654                      | 770                      | 859                      | 1,127                    | 787                      | 840                      | 10,147                   |
| 1932-33 | 592                      | 1,214                    | 831                      | 714                      | 725                      | 458                      | 518                      | 365                      | 651                      | 1,548                    | 1,483                    | 1,864                    | 10,890                   |
| 1933-34 | 2,000                    | 820                      | 802                      | 989                      | 917                      | 529                      | 519                      | 383                      | 373                      | 632                      | 1,046                    | 1,084                    | 10,993                   |
| 1934-35 | 1,089                    | 1,273                    | 605                      | 758                      | 614                      | 542                      |                          |                          |                          |                          |                          |                          |                          |

Grain Futures Administration.

TABLE 24.—Wheat: Volume of trading in futures at contract markets, by markets and by crop years, 1924-25 to 1933-34, and monthly for 1934

| Year and month | Chi-<br>cago<br>Board<br>of<br>Trade | Chi-<br>cago<br>Open<br>Board | Min-<br>neapo-<br>lis | Kan-<br>sas<br>City | Duluth             | St.<br>Louis       | Mil-<br>wau-<br>kee | Seattle            | Port-<br>land      | New<br>York        | Oma-<br>ha <sup>1</sup> | Hutch-<br>inson    |
|----------------|--------------------------------------|-------------------------------|-----------------------|---------------------|--------------------|--------------------|---------------------|--------------------|--------------------|--------------------|-------------------------|--------------------|
|                | Million<br>bushels                   | Million<br>bushels            | Million<br>bushels    | Million<br>bushels  | Million<br>bushels | Million<br>bushels | Million<br>bushels  | Million<br>bushels | Million<br>bushels | Million<br>bushels | Million<br>bushels      | Million<br>bushels |
| 1924-25        | 16,587                               | 446                           | 928                   | 577                 | 190                | 126.0              | 22.0                |                    |                    |                    |                         |                    |
| 1925-26        | 15,869                               | 602                           | 973                   | 546                 | 234                | 96.6               | 24.0                | 0.6                |                    |                    |                         |                    |
| 1926-27        | 10,620                               | 429                           | 632                   | 502                 | 155                | 69.5               | 20.7                | 6.9                |                    | 148.8              |                         |                    |
| 1927-28        | 9,203                                | 342                           | 824                   | 441                 | 272                | 53.2               | 27.6                | 7.4                |                    | 29.1               |                         |                    |
| 1928-29        | 9,908                                | 387                           | 887                   | 576                 | 377                | 27.6               | 25.0                | 7.9                | 0.4                |                    |                         |                    |
| 1929-30        | 16,599                               | 466                           | 1,248                 | 875                 | 328                | 22.2               | 39.3                | 14.4               | 15.0               |                    |                         |                    |
| 1930-31        | 8,360                                | 297                           | 581                   | 515                 | 220                | 8.8                | 15.3                | 12.2               | 12.8               | 25.4               | 15.3                    |                    |
| 1931-32        | 8,566                                | 334                           | 364                   | 773                 | 67                 | 15.2               | 17.6                | 5.4                | 2.9                | 1.9                | .1                      | 1.3                |
| 1932-33        | 9,093                                | 267                           | 589                   | 799                 | 102                | 10.8               | 19.4                | 5.4                | 3.1                |                    |                         | 1.4                |
| 1933-34        | 8,399                                | 249                           | 605                   | 72                  | 735                | 6.1                | 18.7                | 6.0                | 3.3                |                    |                         | .2                 |
| 1934           |                                      |                               |                       |                     |                    |                    |                     |                    |                    |                    |                         |                    |
| January        | 437                                  | 16                            | 31                    | 30                  | 3                  | .4                 | 1.1                 | .2                 | (?)                |                    |                         | (?)                |
| February       | 321                                  | 13                            | 22                    | 23                  | 2                  | .2                 | .8                  | .2                 | (?)                |                    |                         | (?)                |
| March          | 307                                  | 13                            | 25                    | 23                  | 3                  | .2                 | 1.0                 | .1                 | (?)                |                    |                         | (?)                |
| April          | 523                                  | 11                            | 44                    | 47                  | 4                  | .4                 | 1.1                 | .7                 | .5                 |                    |                         | (?)                |
| May            | 892                                  | 25                            | 56                    | 67                  | 4                  | .1                 | 2.0                 | .6                 | .1                 |                    |                         | (?)                |
| June           | 901                                  | 23                            | 53                    | 95                  | 4                  | (?)                | 1.8                 | .3                 | .1                 |                    |                         | (?)                |
| July           | 922                                  | 14                            | 55                    | 94                  | 3                  |                    | 1.6                 | .4                 | .2                 |                    |                         | (?)                |
| August         | 1,068                                | 17                            | 80                    | 101                 | 3                  | (?)                | 2.5                 | .6                 | .3                 |                    |                         | .1                 |
| September      | 500                                  | 10                            | 43                    | 48                  | 2                  |                    | 1.2                 | .2                 | .1                 |                    |                         | .1                 |
| October        | 632                                  | 12                            | 39                    | 52                  | 1                  |                    | 1.4                 | .2                 | (?)                |                    |                         | (?)                |
| November       | 515                                  | 10                            | 33                    | 53                  | 1                  |                    | 1.3                 | .5                 | .3                 |                    |                         | (?)                |
| December       | 462                                  | 8                             | 27                    | 43                  | 1                  | (?)                | .9                  | .2                 | (?)                |                    |                         | (?)                |

<sup>1</sup> Trading on Omaha Grain Exchange started June 16, 1930 and was suspended Dec. 7, 1932.<sup>2</sup> Less than 50,000 bushels.<sup>3</sup> Trading on Hutchinson Board of Trade Association began May 16, 1932.

Grain Futures Administration.

TABLE 25.—Wheat: Open commitments in all futures combined, Chicago Board of Trade, semimonthly, Jan. 15, 1924-Dec. 31, 1934

| Date     | 1924               | 1925               | 1926               | 1927               | 1928               | 1929               | 1930               | 1931               | 1932               | 1933               | 1934               |
|----------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|          | Million<br>bushels | Million<br>bushels | Million<br>bushels | Million<br>bushels | Million<br>bushels | Million<br>bushels | Million<br>bushels | Million<br>bushels | Million<br>bushels | Million<br>bushels | Million<br>bushels |
| Jan. 15  | 96                 | 117                | 112                | 89                 | 83                 | 116                | 199                | 132                | 116                | 134                | 129                |
| Jan. 31  | 95                 | 114                | 109                | 88                 | 84                 | 115                | 201                | 134                | 113                | 133                | 134                |
| Feb. 15  | 105                | 111                | 103                | 88                 | 86                 | 128                | 194                | 133                | 117                | 132                | 131                |
| Feb. 28  | 107                | 113                | 105                | 89                 | 88                 | 142                | 178                | 135                | 126                | 129                | 126                |
| Mar. 15  | 105                | 108                | 100                | 90                 | 85                 | 146                | 173                | 130                | 130                | 125                | 120                |
| Mar. 31  | 93                 | 98                 | 92                 | 82                 | 95                 | 143                | 168                | 127                | 126                | 127                | 116                |
| Apr. 15  | 93                 | 93                 | 97                 | 82                 | 101                | 147                | 165                | 126                | 120                | 136                | 113                |
| Apr. 30  | 75                 | 83                 | 93                 | 69                 | 122                | 133                | 140                | 115                | 114                | 148                | 96                 |
| May 15   | 166                | 87                 | 89                 | 68                 | 102                | 127                | 132                | 93                 | 110                | 150                | 90                 |
| May 31   | 65                 | 97                 | 73                 | 68                 | 93                 | 134                | 125                | 70                 | 112                | 151                | 91                 |
| June 16  | 69                 | 104                | 87                 | 75                 | 93                 | 125                | 127                | 78                 | 112                | 160                | 103                |
| June 30  | 82                 | 93                 | 89                 | 72                 | 87                 | 140                | 105                | 79                 | 106                | 164                | 117                |
| July 15  | 78                 | 90                 | 89                 | 82                 | 85                 | 164                | 110                | 88                 | 111                | 191                | 140                |
| July 31  | 98                 | 94                 | 82                 | 75                 | 102                | 210                | 126                | 86                 | 121                | 167                | 158                |
| Aug. 15  | 117                | 94                 | 101                | 85                 | 112                | 218                | 143                | 95                 | 139                | 163                | 163                |
| Aug. 30  | 108                | 98                 | 107                | 79                 | 113                | 216                | 142                | 96                 | 157                | 150                | 158                |
| Sept. 15 | 106                | 102                | 100                | 83                 | 116                | 230                | 162                | 95                 | 162                | 151                | 153                |
| Sept. 30 | 104                | 99                 | 96                 | 85                 | 111                | 243                | 167                | 94                 | 171                | 168                | 147                |
| Oct. 15  | 110                | 112                | 100                | 89                 | 123                | 246                | 174                | 98                 | 165                | 152                | 135                |
| Oct. 31  | 110                | 115                | 104                | 89                 | 125                | 221                | 185                | 121                | 155                | 137                | 133                |
| Nov. 15  | 118                | 110                | 110                | 94                 | 130                | 198                | 184                | 127                | 155                | 142                | 133                |
| Nov. 30  | 133                | 110                | 103                | 84                 | 133                | 190                | 161                | 123                | 139                | 138                | 128                |
| Dec. 15  | 124                | 105                | 96                 | 75                 | 128                | 190                | 155                | 118                | 139                | 138                | 125                |
| Dec. 31  | 116                | 112                | 92                 | 74                 | 129                | 184                | 145                | 116                | 133                | 133                | 119                |

Grain Futures Administration.

The maximum open commitments in Chicago wheat futures during period shown were 248,294,000 bushels, Oct. 16, 1929; the minimum open commitments were 60,720,000 bushels, May 24, 1924.

TABLE 26.—Wheat, including flour, in terms of grain: International trade, average 1925-26 to 1929-30, annual 1930-31 to 1933-34

| Country                                  | Year beginning July              |                      |                      |                      |                      |                      |                      |                      |                      |                      |
|--|----------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|  | Average<br>1925-26 to<br>1929-30 |                      | 1930-31              |                      | 1931-32              |                      | 1932-33              |                      | 1933-34 <sup>1</sup> |                      |
|  | Ex-<br>ports                     | Im-<br>ports         | Ex-<br>ports         | Im-<br>ports         | Ex-<br>ports         | Im-<br>ports         | Ex-<br>ports         | Im-<br>ports         | Ex-<br>ports         | Im-<br>ports         |
| <b>PRINCIPAL EXPORTING COUNTRIES</b>     | <i>1,000 bushels</i>             | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> |
| Canada.....                              | 307,640                          | 796,267              | 365                  | 243                  | 199,563              | 232                  | 267,342              | 167                  | 198,555              | 321                  |
| United States.....                       | 170,077                          | 15,815               | 131,475              | 19,059               | 135,797              | 12,886               | 41,211               | 9,382                | 87,001               | 11,494               |
| Argentina.....                           | 159,377                          | <sup>2</sup> 120,638 |                      |                      | 144,920              |                      |                      |                      | 144,849              |                      |
| Australia.....                           | 83,288                           | <sup>3</sup> 143,296 |                      | 2                    | 155,451              | 1                    | 148,552              | 3                    | 86,509               |                      |
| Hungary.....                             | 23,539                           | 8                    | 18,425               | 3                    | 18,064               | 1                    | 7,010                | 3                    | 29,615               | 0                    |
| Union of Soviet Socialist Republics..... | 17,731                           | 0                    | 111,780              | 253                  | 71,829               | 2,093                | 19,676               | 2,728                | 33,787               | 247                  |
| Yugoslavia.....                          | 10,822                           | 5                    | 5,332                | 8                    | 15,369               |                      | 1,162                |                      | 839                  |                      |
| British India.....                       | 10,080                           | 8,636                | 10,201               | 10,620               | 3,870                | 1,890                | 2,169                | 2,370                | 1,980                | 480                  |
| Rumania.....                             | 6,528                            | 79                   | 16,072               | 15                   | 37,481               | 12                   | <sup>4</sup> 179     | <sup>4</sup> 24      | <sup>4</sup> 248     | <sup>4</sup> 18      |
| Algeria.....                             | 5,162                            | <sup>2</sup> 2,104   | 10,125               | 2,419                | 7,039                | 2,570                | 11,505               | 1,675                | 12,435               |                      |
| Tunis.....                               | 3,518                            | 669                  | 6,286                | 909                  | 8,365                | 678                  | 7,672                | 576                  | 2,618                | 1,843                |
| Bulgaria.....                            | 1,869                            | <sup>6</sup> 1,804   | 5,041                | 0                    | 11,795               | 0                    | 3,144                | 0                    | 4,769                | 0                    |
| Chile.....                               | 925                              | 456                  | 1,193                | 12                   | 47                   | 6                    | 27                   | 1,823                | 693                  | 1,339                |
| <b>Total.....</b>                        | <b>800,536</b>                   | <b>30,335</b>        | <b>347,229</b>       | <b>33,543</b>        | <b>809,590</b>       | <b>19,839</b>        | <b>629,921</b>       | <b>18,749</b>        | <b>553,893</b>       | <b>16,242</b>        |
| <b>PRINCIPAL IMPORTING COUNTRIES</b>     |                                  |                      |                      |                      |                      |                      |                      |                      |                      |                      |
| United Kingdom.....                      | 11,369                           | 215,665              | 10,064               | 230,449              | 12,294               | 257,405              | 10,138               | 227,115              | 7,125                | 223,276              |
| Germany.....                             | 11,527                           | 85,668               | 825                  | 30,853               | 12,329               | 34,290               | 25,290               | 34,049               | 32,519               | 28,063               |
| Italy.....                               | 2,014                            | 76,212               | 2,652                | 86,231               | 4,936                | 38,421               | 8,294                | 21,465               | 8,921                | 17,244               |
| France.....                              | 4,170                            | 46,574               | 22,145               | 68,929               | 12,549               | 93,311               | 9,104                | 47,981               | 11,964               | 30,075               |
| Belgium.....                             | 2,452                            | 43,452               | 8,102                | 45,261               | 6,733                | 54,654               | 3,847                | 44,910               | 2,502                | 43,683               |
| Brazil.....                              | 0                                | 32,839               | 0                    | 30,708               | 0                    | 31,595               | 0                    | 30,473               | 0                    | 23,586               |
| Netherlands.....                         | 943                              | 30,050               | 1,428                | 36,830               | 366                  | 31,431               | 900                  | 27,351               | 2,196                | 26,273               |
| China <sup>†</sup> .....                 | 1,862                            | 23,496               | 59                   | 22,020               | 93                   | 65,575               | <sup>2</sup> 2,533   | <sup>2</sup> 53,838  | 2,099                | 49,276               |
| Japan.....                               | 5,989                            | 22,158               | 7,953                | 25,343               | 7,592                | 29,977               | 15,093               | 18,332               | 12,795               | 16,564               |
| Greece.....                              | 0                                | 20,055               | 0                    | 24,061               | 0                    | 23,941               | 0                    | 19,517               | 0                    | 11,919               |
| Czechoslovakia.....                      | 418                              | 18,604               | 4,007                | 17,053               | 3,365                | 23,860               | 4,162                | 11,352               | 3,199                | 2,935                |
| Irish Free State.....                    | <sup>5</sup> 74                  | 18,502               |                      | 19,007               |                      | 19,902               |                      | 18,419               |                      | 19,035               |
| Switzerland.....                         | 0                                | 16,461               | 4                    | 18,893               | 27                   | 21,129               | 28                   | 19,313               | 0                    | 17,588               |
| Austria.....                             | 116                              | 16,275               | 287                  | 17,030               | 114                  | 14,194               | 41                   | 13,422               | 39                   | 10,636               |
| Egypt.....                               | 162                              | 10,443               | 24                   | 9,699                | 7                    | 7,632                | 53                   | 633                  | 13                   | 240                  |
| Denmark.....                             | 524                              | 10,102               | 130                  | 11,540               | 48                   | 17,392               | 62                   | 12,151               | 49                   | 12,025               |
| Sweden.....                              | 2,004                            | 9,092                | 76                   | 5,483                | 14                   | 6,606                | 23                   | 3,640                | 14                   | 1,813                |
| Norway.....                              |                                  | 6,964                |                      | 8,275                |                      | 8,857                |                      | 8,234                |                      | 8,557                |
| Union of South Africa.....               | 253                              | 6,317                | 173                  | 3,631                | 291                  | 2,096                | 154                  | 353                  | 185                  | 92                   |
| Cuba.....                                | 0                                | 5,647                | 0                    | 4,560                | 0                    | 4,064                | 0                    |                      | 0                    |                      |
| Finland.....                             | 0                                | 5,390                | 0                    | 4,578                | 0                    | 4,197                | 0                    | 4,146                | 0                    | 4,239                |
| Spain.....                               | 526                              | 5,169                | 169                  | 13                   | 55                   | 2,539                | 20                   | 8,294                | 77                   | 0                    |
| Poland.....                              | 1,407                            | 4,820                | 4,286                | 286                  | 3,762                | 585                  | 2,092                | 811                  | 2,349                | 846                  |
| Netherlands Indies <sup>†</sup> .....    | 0                                | 3,323                | 0                    | 4,016                | 1                    | 4,032                | 1                    | 3,600                | <sup>9</sup> 0       | <sup>9</sup> 2,375   |
| Syria and Lebanon <sup>†</sup> .....     | <sup>14</sup> 14                 | 2,710                | 290                  | 458                  | 1,050                | 1,364                | 694                  | 2,268                | 874                  | 2,461                |
| Latvia <sup>†</sup> .....                | 17                               | 2,027                | 176                  | 1,966                | 0                    | 790                  | 4                    | 283                  | 0                    | 0                    |
| New Zealand.....                         | 45                               | 1,658                | 1                    | 752                  | 1                    | 701                  | 706                  | 2,124                | 300                  | 688                  |
| Indo-China.....                          | <sup>4</sup> 0                   | 1,177                | 0                    | 988                  | 0                    | 924                  | 0                    | 770                  | 0                    | <sup>10</sup> 738    |
| Estonia.....                             | 0                                | 1,062                | 0                    | 880                  | 0                    | 520                  | 0                    | 3                    | 0                    | 1                    |
| <b>Total.....</b>                        | <b>45,886</b>                    | <b>742,962</b>       | <b>57,831</b>        | <b>730,623</b>       | <b>65,627</b>        | <b>802,064</b>       | <b>83,289</b>        | <b>635,317</b>       | <b>87,230</b>        | <b>564,218</b>       |

<sup>1</sup> Preliminary.<sup>2</sup> Imports for consumption.<sup>3</sup> 2-year average.<sup>4</sup> Monthly Crop Report and Agricultural Statistics, International Institute of Agriculture.<sup>5</sup> 4-year average.<sup>6</sup> 1 year only.<sup>†</sup> Calendar year.<sup>8</sup> Beginning July 1, 1932, figures do not include Manchuria.<sup>9</sup> Java and Madura only.<sup>10</sup> Figure for 11 months only.

Bureau of Agricultural Economics; official sources except where otherwise noted.

TABLE 27.—*Flour, spring wheat, family patent: Average wholesale price per barrel,<sup>1</sup> Minneapolis, 1925-26 to 1934-35*

| Year         | July        | Aug.        | Sept.       | Oct.        | Nov.        | Dec.        | Jan.        | Feb.        | Mar.        | Apr.        | May         | June        | Average     |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|              | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> |
| 1925-26..... | 8.78        | 9.04        | 8.52        | 8.52        | 8.81        | 9.52        | 9.85        | 9.46        | 9.19        | 9.20        | 9.00        | 9.32        | 9.10        |
| 1926-27..... | 9.27        | 8.50        | 7.87        | 8.08        | 7.85        | 8.02        | 7.95        | 7.85        | 7.74        | 7.75        | 8.23        | 8.39        | 8.12        |
| 1927-28..... | 8.26        | 7.98        | 7.52        | 7.43        | 7.38        | 7.37        | 7.43        | 7.47        | 7.88        | 8.48        | 8.68        | 8.12        | 7.84        |
| 1928-29..... | 7.63        | 6.94        | 6.87        | 6.76        | 6.68        | 6.68        | 7.00        | 7.40        | 7.23        | 7.07        | 6.60        | 6.68        | 6.96        |
| 1929-30..... | 8.38        | 7.96        | 7.79        | 7.38        | 7.29        | 7.54        | 7.29        | 6.91        | 6.71        | 6.67        | 6.43        | 6.31        | 7.22        |
| 1930-31..... | 6.01        | 5.92        | 5.54        | 5.42        | 5.24        | 5.34        | 5.37        | 5.22        | 5.07        | 4.94        | 5.17        | 5.08        | 5.36        |
| 1931-32..... | 4.56        | 4.50        | 4.44        | 4.52        | 5.01        | 4.75        | 4.50        | 4.42        | 4.31        | 4.62        | 4.71        | 4.38        | 4.56        |
| 1932-33..... | 4.24        | 4.43        | 4.44        | 4.19        | 4.02        | 4.07        | 4.11        | 4.10        | 4.32        | 4.92        | 5.41        | 5.71        | 4.50        |
| 1933-34..... | 8.03        | 7.87        | 7.54        | 7.21        | 7.28        | 7.06        | 7.27        | 7.28        | 7.15        | 6.72        | 7.06        | 7.44        | 7.30        |
| 1934-35..... | 7.59        | 7.93        | 7.89        | 7.59        | 7.47        | 7.37        |             |             |             |             |             |             |             |

<sup>1</sup> Packed in 98-pound cotton sacks, 1925-26 to 1931-32; sold in bulk, 1932-33 to date; basis all quotations carload lots.

Bureau of Agricultural Economics; compiled from the Minneapolis Daily Market Record.  
Prices 1909-10 to 1924-25 appear in 1930 Yearbook, table 25.

TABLE 28.—*Bread: Average retail price per pound (baked weight) in leading cities of the United States, 1925-26 to 1934-35*

| Year         | July 15      | Aug. 15      | Sept. 15     | Oct. 15      | Nov. 15      | Dec. 15      | Jan. 15      | Feb. 15      | Mar. 15      | Apr. 15      | May 15       | June 15      | Average      |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|              | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> |
| 1925-26..... | 9.4          | 9.4          | 9.4          | 9.4          | 9.4          | 9.4          | 9.4          | 9.4          | 9.4          | 9.4          | 9.4          | 9.4          | 9.4          |
| 1926-27..... | 9.4          | 9.4          | 9.4          | 9.4          | 9.4          | 9.4          | 9.4          | 9.4          | 9.4          | 9.4          | 9.4          | 9.4          | 9.4          |
| 1927-28..... | 9.3          | 9.3          | 9.3          | 9.3          | 9.3          | 9.2          | 9.2          | 9.2          | 9.1          | 9.1          | 9.1          | 9.2          | 9.2          |
| 1928-29..... | 9.2          | 9.2          | 9.1          | 9.1          | 9.1          | 9.0          | 9.0          | 9.0          | 9.0          | 9.0          | 9.0          | 9.2          | 9.1          |
| 1929-30..... | 8.0          | 8.0          | 8.0          | 8.0          | 8.0          | 8.0          | 8.0          | 8.0          | 8.0          | 8.0          | 8.0          | 8.0          | 8.0          |
| 1930-31..... | 8.8          | 8.7          | 8.7          | 8.6          | 8.5          | 8.5          | 8.2          | 8.0          | 7.9          | 7.7          | 7.7          | 7.6          | 8.2          |
| 1931-32..... | 7.5          | 7.4          | 7.3          | 7.3          | 7.3          | 7.2          | 7.1          | 7.0          | 6.9          | 6.9          | 6.9          | 6.9          | 7.2          |
| 1932-33..... | 6.8          | 6.8          | 6.7          | 6.7          | 6.7          | 6.6          | 6.4          | 6.4          | 6.4          | 6.4          | 6.5          | 6.6          | 6.6          |
| 1933-34..... | 7.2          | 7.6          | 7.7          | 8.0          | 8.0          | 7.9          | 7.9          | 7.9          | 7.9          | 8.0          | 8.0          | 8.1          | 7.8          |
| 1934-35..... | 8.2          | 8.3          | 8.4          | 8.4          | 8.3          | 8.3          |              |              |              |              |              |              |              |

<sup>1</sup> Beginning August 1933, price is for Tuesday nearest the 15th of month.

Bureau of Agricultural Economics; compiled from Bureau of Labor Statistics retail prices, monthly.  
Data for 1913-14 to 1924-25 are available in the 1930 Yearbook, table 26.

TABLE 29.—*Bran, standard: Average price per ton, Minneapolis, 1925-26 to 1934-35<sup>1</sup>*

| Year         | July        | Aug.        | Sept.       | Oct.        | Nov.        | Dec.        | Jan.        | Feb.        | Mar.        | Apr.        | May         | June        | Average     |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|              | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> |
| 1925-26..... | 23.58       | 24.20       | 23.09       | 22.83       | 25.73       | 26.34       | 26.17       | 23.68       | 22.24       | 25.05       | 23.30       | 21.31       | 23.96       |
| 1926-27..... | 22.02       | 21.69       | 21.64       | 21.33       | 23.14       | 26.02       | 26.43       | 27.64       | 26.96       | 27.31       | 28.43       | 26.51       | 24.93       |
| 1927-28..... | 25.13       | 26.55       | 25.88       | 25.96       | 28.41       | 30.09       | 30.66       | 32.47       | 35.68       | 34.28       | 35.03       | 29.68       | 30.01       |
| 1928-29..... | 27.29       | 24.12       | 25.49       | 28.09       | 30.82       | 31.69       | 30.54       | 28.64       | 26.88       | 22.93       | 22.38       | 22.56       | 26.79       |
| 1929-30..... | 26.17       | 26.44       | 29.19       | 28.21       | 27.90       | 27.66       | 26.58       | 24.45       | 23.17       | 27.43       | 25.06       | 21.25       | 26.13       |
| 1930-31..... | 19.33       | 24.17       | 21.43       | 19.91       | 17.97       | 16.87       | 15.61       | 14.66       | 17.87       | 19.02       | 14.15       | 11.38       | 17.67       |
| 1931-32..... | 10.30       | 10.55       | 10.02       | 9.93        | 14.17       | 13.04       | 12.99       | 11.65       | 13.35       | 13.63       | 10.74       | 9.45        | 11.65       |
| 1932-33..... | 8.56        | 8.58        | 8.44        | 7.93        | 8.33        | 8.15        | 8.27        | 9.35        | 10.82       | 11.82       | 12.17       | 11.56       | 9.50        |
| 1933-34..... | 18.18       | 17.31       | 14.36       | 13.41       | 13.71       | 12.89       | 14.80       | 16.55       | 19.29       | 17.77       | 17.55       | 21.45       | 16.44       |
| 1934-35..... | 20.09       | 23.34       | 22.43       | 22.02       | 24.38       | 29.03       |             |             |             |             |             |             |             |

<sup>1</sup> Quoted as follows: Through May 31, 1930, no container nor lots designated; June 2-Oct. 31, 1930, "based on car lots per ton"; beginning Nov. 1, 1930, "car lots, f. o. b. Minneapolis, prompt shipment."

Bureau of Agricultural Economics; compiled from the Minneapolis Daily Market Record.  
Prices are simple averages of daily quotations.

TABLE 30.—*Middlings, standard: Average price per ton, Minneapolis, 1925-26 to 1934-35*<sup>1</sup>

| Year    | July        | Aug.        | Sept.       | Oct.        | Nov.        | Dec.        | Jan.        | Feb.        | Mar.        | Apr.        | May         | June        | Average     |
|---------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|         | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> |
| 1925-26 | 25.53       | 26.95       | 26.37       | 24.19       | 26.31       | 25.28       | 26.10       | 23.71       | 22.03       | 24.20       | 21.77       | 21.60       | 24.50       |
| 1926-27 | 22.96       | 23.01       | 22.67       | 22.31       | 24.16       | 27.38       | 27.35       | 28.61       | 28.46       | 27.79       | 29.13       | 29.10       | 26.08       |
| 1927-28 | 31.42       | 34.46       | 29.22       | 26.88       | 28.72       | 30.00       | 30.52       | 32.71       | 35.85       | 34.33       | 37.14       | 35.30       | 32.21       |
| 1928-29 | 32.18       | 24.31       | 27.44       | 28.61       | 31.01       | 31.21       | 30.46       | 28.31       | 26.28       | 22.76       | 21.98       | 22.64       | 27.27       |
| 1929-30 | 28.42       | 29.25       | 32.66       | 32.08       | 28.76       | 28.00       | 26.46       | 24.11       | 22.71       | 26.74       | 25.21       | 22.09       | 27.21       |
| 1930-31 | 20.64       | 25.10       | 22.17       | 19.55       | 17.49       | 16.00       | 14.85       | 13.52       | 17.36       | 18.52       | 13.85       | 11.95       | 17.58       |
| 1931-32 | 11.06       | 10.35       | 10.35       | 10.02       | 14.40       | 13.03       | 12.12       | 11.01       | 12.42       | 13.52       | 10.72       | 9.13        | 11.51       |
| 1932-33 | 9.57        | 9.52        | 8.50        | 8.08        | 8.37        | 7.62        | 8.10        | 8.78        | 10.28       | 11.34       | 12.61       | 12.40       | 9.60        |
| 1933-34 | 19.91       | 19.59       | 15.58       | 14.67       | 14.94       | 13.10       | 15.12       | 16.30       | 17.92       | 16.68       | 16.96       | 22.12       | 16.91       |
| 1934-35 | 22.04       | 24.45       | 22.52       | 22.02       | 25.42       | 31.34       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |

<sup>1</sup> Quoted as follows: Through May 31, 1930, no container nor lots designated; June 2-Oct. 31, 1930, "based on car lots per ton"; beginning Nov. 1, 1930, "car lots, f. o. b. Minneapolis, prompt shipment."

Bureau of Agricultural Economics; compiled from the Minneapolis Daily Market Record. Prices are simple averages of daily quotations. Data for earlier years in 1928 Yearbook, table 30.

TABLE 31.—*Rye: Acreage, production, value, and foreign trade, United States, 1919-34*

| Year              | Acreage harvested  | Average yield per acre | Production           | Price per bushel received by producers Dec. 1 <sup>1</sup> | Farm value, basis Dec. 1 price | Price per bushel of No. 2 rye at Minneapolis, year beginning July <sup>2</sup> | Foreign trade, including flour, year beginning July <sup>3</sup> |                      |                          |                          |
|-------------------|--------------------|------------------------|----------------------|--|--------------------------------|--|--|----------------------|--------------------------|--------------------------|
|                   |                    |                        |                      |  |                                |  | Domestic exports   | Imports              | Net exports <sup>4</sup> |                          |
|                   |                    |                        |                      |  |                                |  |  |                      | Total                    | Percentage of production |
|                   | <i>1,000 acres</i> | <i>Bushels</i>         | <i>1,000 bushels</i> | <i>Cents</i>   | <i>1,000 dollars</i>           | <i>Cents</i>   | <i>1,000 bushels</i>   | <i>1,000 bushels</i> | <i>1,000 bushels</i>     | <i>Percent</i>           |
| 1919              | 7,679              | 9.9                    | 75,992               |  |                                |  |  |                      |                          |                          |
| 1919              | 7,168              | 11.0                   | 78,659               | 145.9  | 114,801                        | 160  | 41,531   | 1,077                | 40,454                   | 51.4                     |
| 1920              | 4,825              | 12.8                   | 61,915               | 146.4  | 90,626                         | 161  | 47,337   | 452                  | 46,885                   | 75.7                     |
| 1921              | 4,851              | 12.6                   | 61,023               | 84.0   | 51,274                         | 92   | 29,944   | 700                  | 29,244                   | 47.9                     |
| 1922              | 6,757              | 14.9                   | 100,988              | 63.9   | 64,523                         | 75   | 51,663   | 99                   | 51,564                   | 51.1                     |
| 1923              | 4,936              | 11.3                   | 55,961               | 59.3   | 33,168                         | 65   | 19,902   | 2                    | 19,900                   | 35.6                     |
| 1924              | 3,744              | 14.9                   | 55,674               |  |                                |  |  |                      |                          |                          |
| 1924              | 3,941              | 15.0                   | 59,076               | 95.2   | 56,261                         | 114  | 50,242   | 1                    | 50,241                   | 85.0                     |
| 1925              | 3,900              | 11.3                   | 42,779               | 79.1   | 33,819                         | 88   | 12,647   |                      | 12,646                   | 29.6                     |
| 1926              | 3,419              | 10.3                   | 35,361               | 83.0   | 29,348                         | 98   | 21,698   | 1                    | 21,697                   | 61.4                     |
| 1927              | 3,438              | 15.1                   | 52,111               | 83.5   | 43,487                         | 104  | 26,346   | 2                    | 26,345                   | 50.6                     |
| 1928              | 3,310              | 11.7                   | 38,591               | 83.6   | 32,255                         | 95   | 9,488  | 1                    | 9,487                    | 24.6                     |
| 1929              | 5,033              | 11.3                   | 54,903               |  |                                |  |  |                      |                          |                          |
| 1929              | 3,110              | 11.4                   | 35,482               | 85.7   | 30,395                         | 90   | 2,600  | 1                    | 2,599                    | 7.3                      |
| 1930              | 3,612              | 12.8                   | 46,275               | 44.0   | 20,366                         | 51   | 227  | 88                   | 139                      | .3                       |
| 1931              | 3,104              | 10.4                   | 32,290               | 33.6   | 10,863                         | 42   | 909  | 1                    | 908                      | 2.8                      |
| 1932              | 3,344              | 12.2                   | 40,639               | 27.6   | 11,198                         | 41   | 311  | 14                   | 297                      | .7                       |
| 1933              | 2,349              | 9.0                    | 21,150               | 61.8   | 13,071                         | 69   | 21   | 12,019               | 11,998                   |                          |
| 1934 <sup>5</sup> | 1,937              | 8.3                    | 16,040               | 74.6   | 11,961                         |  |  |                      |                          |                          |

<sup>1</sup> Beginning with 1919 prices are weighted average prices for crop marketing season.

<sup>2</sup> Prices are from Minneapolis Daily Market Record and are averages of daily prices weighted by car-lot sales.

<sup>3</sup> Compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1919-26; January and June issues, 1927-34, and official records of the Bureau of Foreign and Domestic Commerce. Rye—imports for consumption, 1919-34. Rye flour—imports for consumption, 1919-34. Rye flour converted to rye on the basis that 1 barrel of rye flour is the product of 6 bushels of grain.

<sup>4</sup> Domestic exports minus imports for consumption. (See introductory text.)

<sup>5</sup> Net imports.

<sup>6</sup> Preliminary.

Bureau of Agricultural Economics.

Production figures are estimates of the Crop Reporting Board, revised 1919-28. See introductory text. Italic figures are census returns.

TABLE 32.—*Rye: Acreage, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934*

| State and division  | Acreage harvested |             |                   | Yield per acre   |         |                   | Production       |               |                   | Price for crop of— |                   |
|---------------------|-------------------|-------------|-------------------|------------------|---------|-------------------|------------------|---------------|-------------------|--------------------|-------------------|
|                     | Average, 1927-31  | 1933        | 1934 <sup>1</sup> | Average, 1922-31 | 1933    | 1934 <sup>1</sup> | Average, 1927-31 | 1933          | 1934 <sup>1</sup> | 1933               | 1934 <sup>1</sup> |
|                     | 1,000 acres       | 1,000 acres | 1,000 acres       | Bushels          | Bushels | Bushels           | 1,000 bushels    | 1,000 bushels | 1,000 bushels     | Cents              | Cents             |
| New York.....       | 21                | 16          | 20                | 14.8             | 15.0    | 12.5              | 322              | 240           | 250               | 74                 | 84                |
| New Jersey.....     | 27                | 22          | 19                | 17.0             | 16.0    | 18.0              | 467              | 353           | 342               | 73                 | 78                |
| Pennsylvania.....   | 114               | 119         | 112               | 13.8             | 13.5    | 12.0              | 1,572            | 1,606         | 1,344             | 63                 | 72                |
| North Atlantic...   | 162               | 157         | 151               | 14.6             | 14.0    | 12.8              | 2,331            | 2,193         | 1,936             | 69.5               | 74.6              |
| Ohio.....           | 44                | 55          | 63                | 13.3             | 12.5    | 13.0              | 639              | 653           | 810               | 62                 | 70                |
| Indiana.....        | 92                | 97          | 130               | 12.4             | 10.0    | 11.5              | 1,133            | 970           | 1,495             | 65                 | 69                |
| Illinois.....       | 52                | 50          | 60                | 14.8             | 12.5    | 10.5              | 773              | 625           | 630               | 68                 | 75                |
| Michigan.....       | 155               | 125         | 146               | 13.0             | 10.5    | 9.0               | 2,027            | 1,312         | 1,314             | 58                 | 67                |
| Wisconsin.....      | 192               | 226         | 221               | 12.2             | 10.0    | 8.0               | 2,329            | 2,200         | 1,768             | 60                 | 73                |
| Minnesota.....      | 398               | 291         | 291               | 15.8             | 12.5    | 8.5               | 6,293            | 3,658         | 2,474             | 62                 | 72                |
| Iowa.....           | 45                | 33          | 41                | 16.1             | 13.0    | 8.5               | 653              | 429           | 345               | 63                 | 78                |
| Missouri.....       | 17                | 11          | 15                | 9.5              | 7.5     | 8.0               | 167              | 82            | 120               | 75                 | 90                |
| North Dakota.....   | 1,196             | 550         | 198               | 11.3             | 6.5     | 5.2               | 13,759           | 3,575         | 1,030             | 55                 | 67                |
| South Dakota.....   | 264               | 190         | 82                | 11.1             | 4.0     | 4.0               | 3,193            | 760           | 328               | 56                 | 71                |
| Nebraska.....       | 275               | 214         | 132               | 11.4             | 8.0     | 4.0               | 3,234            | 1,712         | 728               | 49                 | 82                |
| Kansas.....         | 23                | 16          | 22                | 10.9             | 8.0     | 8.0               | 267              | 128           | 176               | 59                 | 85                |
| North Central...    | 2,754             | 1,838       | 1,451             | 12.6             | 8.7     | 7.7               | 34,479           | 16,179        | 11,230            | 58.7               | 71.9              |
| Delaware.....       | 5                 | 5           | 6                 | 14.4             | 10.5    | 15.0              | 76               | 52            | 90                | 93                 | 84                |
| Maryland.....       | 18                | 17          | 20                | 14.0             | 13.0    | 15.0              | 256              | 221           | 300               | 80                 | 77                |
| Virginia.....       | 45                | 55          | 50                | 11.4             | 10.5    | 11.0              | 574              | 578           | 550               | 83                 | 87                |
| West Virginia.....  | 12                | 12          | 12                | 11.1             | 12.0    | 10.0              | 145              | 144           | 120               | 74                 | 79                |
| North Carolina..... | 55                | 60          | 66                | 7.6              | 7.0     | 7.5               | 444              | 420           | 495               | 94                 | 100               |
| South Carolina..... | 8                 | 7           | 8                 | 8.5              | 7.0     | 7.5               | 73               | 49            | 60                | 124                | 136               |
| Georgia.....        | 14                | 13          | 13                | 6.4              | 5.5     | 6.5               | 95               | 72            | 84                | 103                | 115               |
| South Atlantic...   | 157               | 169         | 175               | 9.7              | 9.1     | 9.7               | 1,664            | 1,536         | 1,699             | 87.4               | 91.5              |
| Kentucky.....       | 16                | 12          | 12                | 11.7             | 11.0    | 11.5              | 190              | 132           | 138               | 80                 | 83                |
| Tennessee.....      | 16                | 16          | 15                | 7.1              | 6.5     | 5.5               | 109              | 104           | 82                | 90                 | 94                |
| Oklahoma.....       | 8                 | 5           | 6                 | 9.0              | 7.5     | 9.0               | 81               | 38            | 54                | 69                 | 87                |
| Texas.....          | 3                 | 2           | 3                 | 10.6             | 6.0     | 11.0              | 31               | 12            | 33                | 71                 | 71                |
| South Central...    | 43                | 35          | 36                | 9.4              | 8.2     | 8.5               | 411              | 286           | 307               | 82.2               | 85.3              |
| Montana.....        | 65                | 50          | 35                | 11.4             | 7.0     | 6.0               | 735              | 350           | 210               | 40                 | 60                |
| Idaho.....          | 4                 | 3           | 4                 | 11.7             | 11.0    | 9.0               | 45               | 33            | 36                | 49                 | 64                |
| Wyoming.....        | 33                | 23          | 16                | 7.9              | 5.5     | 4.5               | 262              | 126           | 72                | 44                 | 77                |
| Colorado.....       | 64                | 18          | 32                | 8.6              | 6.5     | 5.5               | 546              | 117           | 176               | 49                 | 80                |
| Utah.....           | 3                 | 3           | 3                 | 8.8              | 7.0     | 5.0               | 25               | 21            | 15                | 63                 | 76                |
| Washington.....     | 15                | 12          | 14                | 10.8             | 7.0     | 8.5               | 178              | 84            | 119               | 61                 | 72                |
| Oregon.....         | 18                | 21          | 20                | 13.2             | 10.5    | 12.0              | 233              | 220           | 240               | 64                 | 75                |
| Western.....        | 203               | 130         | 124               | 9.9              | 7.3     | 7.0               | 2,034            | 951           | 868               | 49.7               | 71.7              |
| United States...    | 3,319             | 2,349       | 1,937             | 12.4             | 9.0     | 8.3               | 40,950           | 21,150        | 16,040            | 61.8               | 74.6              |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.



TABLE 33.—*Rye: Acreage, yield per acre, and production in specified countries, average 1921-22 to 1925-26, annual 1931-32 to 1934-35*

| Country  | Acreage                             |                |                |                |                      | Yield per acre                      |         |         |         |                      | Production                          |                  |                  |                  |                      |
|--|-------------------------------------|----------------|----------------|----------------|----------------------|-------------------------------------|---------|---------|---------|----------------------|-------------------------------------|------------------|------------------|------------------|----------------------|
|  | Average<br>1921-22<br>to<br>1925-26 | 1931-32        | 1932-33        | 1933-34        | 1934-35 <sup>1</sup> | Average<br>1921-22<br>to<br>1925-26 | 1931-32 | 1932-33 | 1933-34 | 1934-35 <sup>1</sup> | Average<br>1921-22<br>to<br>1925-26 | 1931-32          | 1932-33          | 1933-34          | 1934-35 <sup>1</sup> |
| NORTHERN HEMISPHERE                                  |                                     |                |                |                |                      |                                     |         |         |         |                      |                                     |                  |                  |                  |                      |
| North America:                                       | 1,000<br>acres                      | 1,000<br>acres | 1,000<br>acres | 1,000<br>acres | 1,000<br>acres       | Bushels                             | Bushels | Bushels | Bushels | Bushels              | 1,000<br>bushels                    | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels     |
| Canada.....  | 1,386                               | 778            | 774            | 683            | 735                  | 14.4                                | 6.8     | 10.9    | 7.4     | 10,994               | 8,322                               | 8,470            | 8,437            | 8,437            | 8,437                |
| United States.....                                   | 4,857                               | 3,104          | 2,344          | 2,349          | 1,937                | 13.2                                | 10.4    | 12.2    | 9.0     | 63,905               | 32,290                              | 40,639           | 21,150           | 16,940           | 16,940               |
| Total.....   | 6,243                               | 3,882          | 4,118          | 2,932          | 2,672                | 13.4                                | 9.7     | 11.9    | 8.7     | 83,999               | 37,612                              | 49,109           | 25,477           | 21,477           | 21,477               |
| Europe:  |                                     |                |                |                |                      |                                     |         |         |         |                      |                                     |                  |                  |                  |                      |
| Norway.....  | 28                                  | 15             | 16             | 10             | 15                   | 27.9                                | 25.2    | 32.6    | 27.4    | 780                  | 378                                 | 522              | 438              | 418              | 418                  |
| Sweden.....  | 886                                 | 512            | 516            | 540            | 575                  | 26.2                                | 21.8    | 33.1    | 33.2    | 21,911               | 11,146                              | 17,094           | 18,128           | 20,865           | 20,865               |
| Denmark.....   | 535                                 | 332            | 297            | 353            | 375                  | 24.6                                | 25.3    | 29.4    | 28.0    | 13,162               | 8,406                               | 8,736            | 9,897            | 11,023           | 11,023               |
| Netherlands.....                                     | 501                                 | 445            | 410            | 408            | 450                  | 32.0                                | 31.8    | 33.8    | 38.2    | 16,331               | 14,167                              | 13,864           | 15,602           | 16,231           | 16,231               |
| Belgium.....   | 559                                 | 549            | 502            | 578            | 544                  | 36.8                                | 37.3    | 42.1    | 38.6    | 20,564               | 20,482                              | 23,062           | 22,310           | 20,802           | 20,802               |
| Luxemburg.....                                       | 19                                  | 10             | 20             | 21             | 19                   | 18.4                                | 21.0    | 24.8    | 27.4    | 349                  | 336                                 | 496              | 575              | 627              | 627                  |
| France.....  | 2,196                               | 1,732          | 1,706          | 1,669          | 1,609                | 18.5                                | 16.8    | 19.6    | 20.7    | 40,645               | 29,518                              | 33,876           | 35,337           | 32,642           | 32,642               |
| Spain.....   | 1,802                               | 1,516          | 1,516          | 1,400          | 1,451                | 15.4                                | 13.9    | 17.1    | 14.2    | 27,721               | 21,102                              | 25,905           | 20,702           | 22,176           | 22,176               |
| Portugal.....  | 604                                 | 427            | 366            | 409            | 444                  | 8.5                                 | 11.9    | 12.9    | 8.8     | 5,110                | 5,070                               | 4,704            | 3,615            | 4,802            | 4,802                |
| Italy.....   | 317                                 | 304            | 288            | 282            | 278                  | 19.8                                | 21.5    | 21.9    | 23.6    | 6,521                | 6,521                               | 6,313            | 6,739            | 5,607            | 5,607                |
| Switzerland.....                                     | 55                                  | 46             | 46             | 46             | 35                   | 31.8                                | 30.5    | 32.2    | 33.6    | 1,747                | 1,401                               | 1,480            | 1,545            | 1,242            | 1,242                |
| Germany.....   | 10,745                              | 10,789         | 10,996         | 11,179         | 11,097               | 23.8                                | 24.4    | 29.9    | 30.7    | 255,937              | 262,977                             | 329,255          | 343,570          | 290,496          | 290,496              |
| Austria.....   | 888                                 | 934            | 957            | 963            | 949                  | 18.3                                | 20.3    | 25.3    | 28.2    | 16,242               | 13,931                              | 24,227           | 27,042           | 23,896           | 23,896               |
| Czechoslovakia.....                                  | 2,128                               | 2,470          | 2,569          | 2,584          | 2,442                | 24.0                                | 22.1    | 33.3    | 31.8    | 52,200               | 64,030                              | 85,060           | 82,103           | 69,968           | 69,968               |
| Hungary.....   | 1,591                               | 1,486          | 1,553          | 1,677          | 1,632                | 10.9                                | 14.6    | 10.5    | 12.4    | 26,839               | 21,672                              | 30,300           | 37,654           | 20,197           | 20,197               |
| Yugoslavia.....                                      | 477                                 | 603            | 600            | 633            | 613                  | 12.4                                | 12.6    | 13.9    | 15.3    | 5,930                | 7,614                               | 8,328            | 9,659            | 7,089            | 7,089                |
| Greece.....  | 84                                  | 172            | 169            | 183            | 204                  | 12.3                                | 10.5    | 12.3    | 15.3    | 1,051                | 1,800                               | 2,087            | 2,800            | 3,440            | 3,440                |
| Bulgaria.....  | 442                                 | 600            | 543            | 510            | 476                  | 13.2                                | 17.8    | 16.6    | 18.3    | 5,831                | 10,653                              | 9,030            | 9,883            | 6,676            | 6,676                |
| Rumania.....   | 692                                 | 1,006          | 861            | 968            | 908                  | 12.1                                | 13.9    | 12.2    | 18.3    | 8,371                | 13,962                              | 10,613           | 17,555           | 8,089            | 8,089                |
| Poland.....  | 12,911                              | 14,263         | 13,951         | 14,271         | 14,014               | 16.0                                | 16.7    | 17.2    | 18.0    | 205,884              | 16,229                              | 240,556          | 278,460          | 222,764          | 222,764              |
| Lithuania.....                                       | 1,355                               | 1,225          | 1,194          | 1,210          | 1,225                | 16.9                                | 12.9    | 18.9    | 19.0    | 22,942               | 16,229                              | 22,621           | 21,731           | 26,221           | 26,221               |
| Latvia.....  | 624                                 | 572            | 563            | 637            | 603                  | 16.3                                | 9.8     | 10.9    | 21.9    | 9,535                | 5,615                               | 11,793           | 13,979           | 16,066           | 16,066               |
| Estonia.....   | 394                                 | 356            | 364            | 373            | 364                  | 15.9                                | 16.3    | 19.5    | 23.4    | 6,246                | 5,820                               | 7,113            | 8,735            | 8,735            | 8,735                |
| Finland.....   | 578                                 | 528            | 538            | 575            | 605                  | 19.6                                | 23.5    | 24.1    | 25.4    | 11,316               | 12,411                              | 12,966           | 14,633           | 15,643           | 15,643               |
| Union of Soviet Socialist Republics.....             | 59,672                              | 68,311         | 64,715         | 62,719         | 62,719               | 11.8                                | 12.7    | 13.4    | 15.2    | 706,347              | 805,099                             | 806,880          | 952,308          | 952,308          | 952,308              |
| Total European countries reporting<br>all years..... | 39,757                              | 40,531         | 40,291         | 41,170         | 40,603               | 19.6                                | 19.0    | 23.0    | 24.3    | 778,811              | 770,371                             | 925,297          | 998,377          | 849,896          | 849,896              |



TABLE 34.—*Rye: Production, world and selected countries, 1894-95 to 1934-35*

| Crop year            | World, excluding Russia and China | Northern Hemisphere, excluding Russia and China | Europe, excluding Russia | Selected countries     |                        |                        |                        |                        |                        |                        |
|----------------------|-----------------------------------|---|--------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|                      |                                   |   |                          | Russia <sup>1</sup>    | United States          | Germany                | France                 | Poland                 | Hungary                | Czechoslovakia         |
|                      | <i>Million bushels</i>            | <i>Million bushels</i>                          | <i>Million bushels</i>   | <i>Million bushels</i> | <i>Million bushels</i> | <i>Million bushels</i> | <i>Million bushels</i> | <i>Million bushels</i> | <i>Million bushels</i> | <i>Million bushels</i> |
| 1894-95              | 710                               | 709   | 668                      | 863                    | 27                     | 328                    | 75                     |                        | 58                     |                        |
| 1895-96              | 663                               | 661   | 618                      | 773                    | 30                     | 304                    | 72                     |                        | 47                     |                        |
| 1896-97              | 719                               | 717   | 673                      | 790                    | 32                     | 336                    | 70                     |                        | 51                     |                        |
| 1897-98              | 646                               | 644   | 600                      | 654                    | 31                     | 322                    | 48                     |                        | 36                     |                        |
| 1898-99              | 722                               | 721   | 678                      | 738                    | 29                     | 356                    | 67                     |                        | 46                     |                        |
| 1899-1900            | 705                               | 704   | 664                      | 912                    | 26                     | 342                    | 67                     |                        | 50                     |                        |
| 1900-1               | 671                               | 670   | 629                      | 920                    | 27                     | 337                    | 59                     |                        | 42                     |                        |
| 1901-2               | 690                               | 688   | 644                      | 755                    | 31                     | 321                    | 58                     |                        | 44                     |                        |
| 1902-3               | 731                               | 730   | 682                      | 919                    | 34                     | 374                    | 46                     |                        | 53                     |                        |
| 1903-4               | 764                               | 762   | 720                      | 912                    | 29                     | 390                    | 58                     |                        | 51                     |                        |
| 1904-5               | 752                               | 750   | 709                      | 1,008                  | 28                     | 396                    | 53                     |                        | 46                     |                        |
| 1905-6               | 778                               | 777   | 732                      | 737                    | 31                     | 378                    | 59                     |                        | 53                     |                        |
| 1906-7               | 780                               | 778   | 736                      | 668                    | 30                     | 379                    | 51                     |                        | 54                     |                        |
| 1907-8               | 744                               | 742   | 700                      | 815                    | 28                     | 384                    | 56                     |                        | 42                     |                        |
| 1908-9               | 820                               | 819   | 776                      | 790                    | 29                     | 423                    | 52                     |                        | 48                     |                        |
| 1909-10              | 867                               | 864   | 821                      | 904                    | 30                     | 447                    | 56                     |                        | 47                     |                        |
| 1910-11              | 812                               | 810   | 768                      | 875                    | 29                     | 414                    | 44                     |                        | 52                     |                        |
| 1911-12              | 827                               | 824   | 779                      | 769                    | 31                     | 428                    | 47                     |                        | 54                     |                        |
| 1912-13              | 864                               | 862   | 810                      | 1,051                  | 38                     | 457                    | 49                     |                        | 57                     |                        |
| 1913-14              | 891                               | 888   | 834                      | 1,011                  | 40                     | 481                    | 50                     |                        | 56                     |                        |
| 1914-15              | 765                               | 763   | 707                      | <sup>2</sup> 870       | 42                     | 410                    | 44                     |                        | 45                     |                        |
| 1915-16              | 634                               | 631   | 621                      | <sup>3</sup> 910       | 47                     | 360                    | 33                     |                        | 48                     |                        |
| 1916-17              | 657                               | 655   | 598                      | <sup>4</sup> 771       | 43                     | 352                    | 33                     |                        |                        |                        |
| 1917-18              | 545                               | 542   | 466                      | 614                    | 60                     | <sup>5</sup> 228       | 25                     |                        |                        |                        |
| 1918-19              | 532                               | 530   | 476                      |                        | 83                     | 260                    | <sup>5</sup> 30        |                        |                        |                        |
| 1919-20              | 689                               | 687   | 586                      |                        | 79                     | 238                    | 31                     | 108                    |                        | 33                     |
| 1920-21              | 620                               | 617   | 532                      | 365                    | 62                     | 194                    | 37                     | 74                     | <sup>6</sup> 20        | 33                     |
| 1921-22              | 858                               | 855   | 766                      | 401                    | 61                     | 268                    | 44                     | 175                    | 23                     | 54                     |
| 1922-23              | 866                               | 860   | 720                      | 715                    | 101                    | 206                    | 38                     | 203                    | 25                     | 51                     |
| 1923-24              | 924                               | 918   | 832                      | 779                    | 56                     | 263                    | 37                     | 243                    | 31                     | 53                     |
| 1924-25              | 739                               | 735   | 655                      | 741                    | 59                     | 226                    | 40                     | 148                    | 22                     | 45                     |
| 1925-26              | 1,013                             | 1,006   | 947                      | 896                    | 43                     | 317                    | 44                     | 265                    | 33                     | 58                     |
| 1926-27              | 825                               | 817   | 763                      | 931                    | 35                     | 252                    | 30                     | 204                    | 31                     | 56                     |
| 1927-28              | 898                               | 887   | 813                      | 952                    | 52                     | 269                    | 34                     | 232                    | 22                     | 60                     |
| 1928-29              | 975                               | 965   | 905                      | 760                    | 39                     | 335                    | 34                     | 241                    | 33                     | 72                     |
| 1929-30              | 1,011                             | 1,004   | 940                      | 802                    | 35                     | 321                    | 36                     | 276                    | 31                     | 72                     |
| 1930-31              | 1,013                             | 1,007   | 924                      | 929                    | 46                     | 302                    | 28                     | 274                    | 28                     | 70                     |
| 1931-32              | 843                               | 832   | 776                      | 866                    | 32                     | 263                    | 30                     | 224                    | 22                     | 55                     |
| 1932-33              | 1,007                             | 992   | 932                      | 867                    | 41                     | 329                    | 34                     | 241                    | 30                     | 86                     |
| 1933-34              | 1,056                             | 1,045   | 1,003                    | 952                    | 21                     | 344                    | 35                     | 278                    | 38                     | 82                     |
| 1934-35 <sup>6</sup> | 911                               | 892   | 855                      |                        | 16                     | 299                    | 33                     | 223                    | 20                     | 60                     |

<sup>1</sup> Includes all Russian territory reporting for the years shown.<sup>2</sup> Exclusive of the 10 Vistula Provinces of Russian Poland and the Province of Batum in Transcaucasia.<sup>3</sup> Exclusive of Russian Poland, Lithuania, parts of Latvia and the Ukraine, and the 2 Provinces of Batum and Elizabetpol in Transcaucasia.<sup>4</sup> Beginning with this year, estimates for the present territory of the Union of Soviet Socialist Republics exclusive of Turkestan, Transcaucasia, and the Far East, which territory in 1924 produced 8,646,000 bushels.<sup>5</sup> Beginning with this year post-war boundaries, therefore not comparable with earlier years.<sup>6</sup> Preliminary.

Bureau of Agricultural Economics.

Both acreage and production figures refer to the year of harvest. Harvests of the Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow; thus, for 1934-35 the crop harvested in the Northern Hemisphere countries in 1934 is combined with the Southern Hemisphere harvest which begins late in 1934 and ends early in 1935.

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TABLE 35.—*Rye: Monthly marketings by farmers, as reported by about 3,500 mills and elevators, United States, 1924-25 to 1933-34*

| Year    | Percentage of receipts during— |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |
|---------|--------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|         | July                           | Aug.                 | Sept.                | Oct.                 | Nov.                 | Dec.                 | Jan.                 | Feb.                 | Mar.                 | Apr.                 | May                  | June                 | Year                 |
|         | <i>Per-<br/>cent</i>           | <i>per-<br/>cent</i> | <i>Per-<br/>cent</i> | <i>Per-<br/>cent</i> | <i>Per-<br/>cent</i> | <i>Per-<br/>cent</i> | <i>Per-<br/>cent</i> | <i>Per-<br/>cent</i> | <i>Per-<br/>cent</i> | <i>Per-<br/>cent</i> | <i>Per-<br/>cent</i> | <i>Per-<br/>cent</i> | <i>Per-<br/>cent</i> |
| 1924-25 | 3.9                            | 16.9                 | 25.4                 | 23.3                 | 10.7                 | 7.0                  | 5.0                  | 3.1                  | 1.7                  | 1.0                  | 1.2                  | 0.8                  | 100.0                |
| 1925-26 | 5.2                            | 19.2                 | 23.3                 | 12.4                 | 8.7                  | 3.9                  | 6.6                  | 4.6                  | 3.1                  | 2.4                  | 2.8                  | 2.8                  | 100.0                |
| 1926-27 | 8.0                            | 20.1                 | 19.7                 | 13.0                 | 8.5                  | 6.0                  | 6.0                  | 6.0                  | 3.7                  | 2.6                  | 3.0                  | 3.4                  | 100.0                |
| 1927-28 | 4.7                            | 19.0                 | 25.6                 | 17.5                 | 9.8                  | 5.8                  | 4.4                  | 4.1                  | 3.7                  | 2.4                  | 1.7                  | 1.3                  | 100.0                |
| 1928-29 | 4.5                            | 19.5                 | 27.0                 | 16.3                 | 9.3                  | 6.1                  | 4.5                  | 5.1                  | 2.9                  | 1.9                  | 1.4                  | 1.5                  | 100.0                |
| 1929-30 | 12.3                           | 34.0                 | 18.0                 | 11.6                 | 6.6                  | 6.0                  | 3.4                  | 2.3                  | 1.7                  | 1.4                  | 1.5                  | 1.2                  | 100.0                |
| 1930-31 | 11.2                           | 32.7                 | 23.0                 | 11.7                 | 4.7                  | 4.2                  | 2.6                  | 2.7                  | 1.9                  | 1.9                  | 1.8                  | 1.6                  | 100.0                |
| 1931-32 | 11.7                           | 21.6                 | 14.7                 | 10.7                 | 8.6                  | 6.5                  | 6.0                  | 5.5                  | 5.2                  | 3.8                  | 3.3                  | 2.4                  | 100.0                |
| 1932-33 | 7.5                            | 17.4                 | 13.3                 | 8.6                  | 6.1                  | 4.7                  | 4.6                  | 3.5                  | 4.7                  | 6.4                  | 9.2                  | 14.0                 | 100.0                |
| 1933-34 | 22.0                           | 23.3                 | 14.2                 | 9.8                  | 7.3                  | 4.4                  | 3.7                  | 3.6                  | 3.3                  | 2.6                  | 2.6                  | 2.7                  | 100.0                |

Bureau of Agricultural Economics. Data for earlier years in 1928 Yearbook, table 38.

TABLE 36.—*Rye: Production and farm disposition, United States, 1924-25 to 1934-35*

| Season       | Production           | Used for seed        | Fed to live-stock    | Ground at mills for home use or exchanged for flour | Sold or for sale     | Season                  | Production           | Used for seed        | Fed to live-stock    | Ground at mills for home use or exchanged for flour | Sold or for sale     |
|--------------|----------------------|----------------------|----------------------|---|----------------------|-------------------------|----------------------|----------------------|----------------------|---|----------------------|
|              | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i>                                | <i>1,000 bushels</i> |                         | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i>                                | <i>1,000 bushels</i> |
| 1924-25..... | 59,076               | 6,609                | 10,136               | 717   | 41,614               | 1930-31.....            | 46,275               | 6,838                | 19,038               | 380   | 19,959               |
| 1925-26..... | 42,779               | 6,602                | 5,219                | 651   | 30,307               | 1931-32.....            | 32,290               | 6,752                | 14,100               | 330   | 11,043               |
| 1926-27..... | 35,361               | 6,075                | 6,767                | 586   | 21,933               | 1932-33.....            | 40,639               | 6,149                | 13,827               | 360   | 15,273               |
| 1927-28..... | 52,111               | 6,369                | 6,538                | 521   | 38,683               | 1933-34.....            | 21,150               | 6,545                | 7,657                | 390   | 6,558                |
| 1928-29..... | 38,591               | 5,784                | 6,679                | 458   | 25,670               | 1934-35 <sup>1</sup> .. | 16,040               | 5,799                | 6,151                | 390   | 3,700                |
| 1929-30..... | 35,482               | 6,480                | 7,373                | 390   | 21,239               |                         |                      |                      |                      |   |                      |

<sup>1</sup> Preliminary. Disposition items are approximations made in March 1935.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 37.—*Rye: Receipts graded by licensed inspectors, all inspection points, 1924-25 to 1933-34*

| Year beginning July | Grade       |             |             |             |             | Total       |
|---------------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                     | No. 1       | No. 2       | No. 3       | No. 4       | Sample      |             |
|                     | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> |
| 1924-25.....        | 27,977      | 24,251      | 8,841       | 2,957       | 876         | 64,902      |
| 1925-26.....        | 3,969       | 11,730      | 5,111       | 1,794       | 494         | 23,098      |
| 1926-27.....        | 3,892       | 9,921       | 5,794       | 3,597       | 1,445       | 24,649      |
| 1927-28.....        | 10,659      | 15,573      | 4,976       | 1,409       | 564         | 33,181      |
| 1928-29.....        | 1,787       | 13,081      | 6,646       | 1,994       | 626         | 24,134      |
| 1929-30.....        | 8,985       | 10,611      | 1,642       | 475         | 288         | 22,001      |
| 1930-31.....        | 5,804       | 9,320       | 1,198       | 225         | 103         | 16,650      |
| 1931-32.....        | 2,071       | 5,531       | 927         | 240         | 71          | 8,840       |
| 1932-33.....        | 3,821       | 7,713       | 721         | 261         | 71          | 12,587      |
| 1933-34.....        | 4,559       | 6,669       | 2,570       | 194         | 1,630       | 15,622      |

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TABLE 38.—*Rye: Commercial stocks, 1926-27 to 1934-35*DOMESTIC RYE IN UNITED STATES <sup>1</sup>

| Year    | July             | Aug.             | Sept.            | Oct.             | Nov.             | Dec.             | Jan.             | Feb.             | Mar.             | Apr.             | May              | June             |
|---------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|         | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels |
| 1926-27 |                  |                  |                  |                  |                  |                  | 13,092           | 12,880           | 13,897           | 13,905           | 7,818            | 2,522            |
| 1927-28 | 1,018            | 1,454            | 2,091            | 2,608            | 2,077            | 2,970            | 3,281            | 3,915            | 4,321            | 5,090            | 5,544            | 2,662            |
| 1928-29 | 2,499            | 2,112            | 1,351            | 2,684            | 4,771            | 5,589            | 5,834            | 6,185            | 6,440            | 6,914            | 6,598            | 6,532            |
| 1929-30 | 6,632            | 6,614            | 8,561            | 9,771            | 11,453           | 12,033           | 13,997           | 14,536           | 14,379           | 14,285           | 13,701           | 12,572           |
| 1930-31 | 12,481           | 12,073           | 14,248           | 17,302           | 17,291           | 17,173           | 16,361           | 15,629           | 14,270           | 12,903           | 10,990           | 10,599           |
| 1931-32 | 10,154           | 9,838            | 9,405            | 10,095           | 10,376           | 10,431           | 10,223           | 10,085           | 10,006           | 10,124           | 9,493            | 9,428            |
| 1932-33 | 8,942            | 8,955            | 9,052            | 8,700            | 8,485            | 8,030            | 7,993            | 7,936            | 7,774            | 7,688            | 8,006            | 8,806            |
| 1933-34 | 10,501           | 11,273           | 11,998           | 12,968           | 13,457           | 14,153           | 13,735           | 12,936           | 12,032           | 11,621           | 11,002           | 10,505           |
| 1934-35 | 11,452           | 12,049           | 11,798           | 11,776           | 12,323           | 13,425           |                  |                  |                  |                  |                  |                  |

UNITED STATES RYE IN CANADA <sup>2</sup>

| Year    | July             | Aug.             | Sept.            | Oct.             | Nov.             | Dec.             | Jan.             | Feb.             | Mar.             | Apr.             | May              | June             |
|---------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|         | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels |
| 1926-27 |                  |                  |                  |                  |                  |                  | 1,658            | 1,704            | 1,533            | 1,384            | 3,379            | 869              |
| 1927-28 | 1,465            | 589              | 686              | 1,385            | 1,390            | 1,208            | 930              | 772              | 351              | 259              | 47               | 512              |
| 1928-29 | 750              | 449              | 357              | 838              | 1,243            | 1,478            | 1,707            | 1,425            | 1,255            | 1,810            | 1,367            | 1,879            |
| 1929-30 | 1,182            | 1,255            | 1,640            | 2,804            | 2,883            | 2,900            | 2,726            | 2,720            | 2,714            | 2,692            | 2,871            | 3,821            |
| 1930-31 | 3,789            | 3,761            | 3,432            | 3,139            | 2,792            | 2,113            | 2,131            | 2,128            | 2,126            | 2,119            | 2,110            | 1,911            |
| 1931-32 | 1,827            | 1,792            | 1,775            | 1,229            | 821              | 782              | 754              | 732              | 675              | 250              | 213              | 295              |
| 1932-33 | 242              | 160              | 121              | 89               | 99               | 99               | 99               | 99               | 99               | 99               | 99               | 1                |
| 1933-34 | 1                | 1                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                |
| 1934-35 | 0                | 0                | 0                | 0                | 0                | 0                |                  |                  |                  |                  |                  |                  |

CANADIAN RYE IN CANADA <sup>3</sup>

| Year    | July             | Aug.             | Sept.            | Oct.             | Nov.             | Dec.             | Jan.             | Feb.             | Mar.             | Apr.             | May              | June             |
|---------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|         | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels |
| 1926-27 |                  |                  |                  |                  |                  |                  | 3,546            | 3,758            | 3,842            | 3,853            | 3,064            | 1,445            |
| 1927-28 | 1,131            | 1,149            | 912              | 2,444            | 3,479            | 3,052            | 4,137            | 4,787            | 4,963            | 4,773            | 4,525            | 2,668            |
| 1928-29 | 2,514            | 1,180            | 603              | 2,444            | 3,448            | 3,595            | 4,834            | 4,760            | 4,571            | 4,423            | 4,019            | 3,907            |
| 1929-30 | 2,180            | 3,282            | 3,982            | 5,898            | 7,263            | 8,087            | 8,380            | 8,348            | 8,517            | 8,307            | 8,112            | 7,992            |
| 1930-31 | 7,937            | 7,519            | 8,541            | 10,907           | 12,546           | 12,780           | 13,135           | 13,150           | 13,059           | 13,230           | 13,255           | 12,547           |
| 1931-32 | 12,602           | 12,161           | 12,356           | 12,306           | 13,021           | 12,202           | 11,473           | 11,161           | 10,994           | 10,904           | 10,345           | 8,921            |
| 1932-33 | 7,096            | 5,238            | 4,753            | 4,928            | 4,750            | 4,359            | 4,441            | 4,475            | 4,579            | 4,635            | 4,655            | 4,855            |
| 1933-34 | 5,036            | 5,401            | 5,180            | 4,687            | 4,170            | 4,060            | 4,024            | 3,985            | 3,980            | 3,940            | 3,842            | 3,837            |
| 1934-35 | 3,796            | 3,815            | 3,436            | 4,014            | 4,042            | 3,970            |                  |                  |                  |                  |                  |                  |

CANADIAN RYE IN UNITED STATES <sup>4</sup>

| Year    | July             | Aug.             | Sept.            | Oct.             | Nov.             | Dec.             | Jan.             | Feb.             | Mar.             | Apr.             | May              | June             |
|---------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|         | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels |
| 1926-27 |                  |                  |                  |                  |                  |                  | 2,266            | 1,922            | 1,631            | 494              | 689              | 739              |
| 1927-28 | 63               | 50               | 20               | 124              | 441              | 802              | 851              | 434              | 203              | 90               | 90               | 371              |
| 1928-29 | 248              | 237              | 12               | 83               | 205              | 258              | 208              | 532              | 559              | 440              | 451              | 480              |
| 1929-30 | 380              | 394              | 432              | 320              | 429              | 431              | 431              | 431              | 371              | 370              | 426              | 270              |
| 1930-31 | 188              | 187              | 172              | 239              | 430              | 651              | 489              | 446              | 528              | 344              | 273              | 2                |
| 1931-32 | 2                | 2                | 2                | 390              | 358              | 1,405            | 1,746            | 1,703            | 1,389            | 1,631            | 794              | 526              |
| 1932-33 | 498              | 347              | 412              | 412              | 502              | 412              | 548              | 545              | 545              | 543              | 543              | 213              |
| 1933-34 | 213              | 192              | 238              | 260              | 374              | 103              | 86               | 86               | 85               | 82               | 77               | 68               |
| 1934-35 | 68               | 54               | 104              | 50               | 0                | 0                |                  |                  |                  |                  |                  |                  |

<sup>1</sup> Includes domestic rye in store in public and private elevators in 41 markets and rye afloat in vessels or barges in harbors of lake and seaboard ports. Does not include rye in transit either by rail or water, stocks in mills, or mill elevators attached to mills, or private stocks of rye intended for local use.

<sup>2</sup> Includes United States rye in store at 15 Canadian points or afloat in vessels or barges in the harbors of lake and seaboard ports. Does not include rye in transit to Canadian ports.

<sup>3</sup> Includes practically all Canadian rye held within Canadian boundaries, exclusive of farm and certain mill stocks.

<sup>4</sup> Includes Canadian rye in store and afloat at 10 United States lake and seaboard ports but not Canadian rye in transit on lakes or canals.

Bureau of Agricultural Economics; compiled from weekly reports to the grain, hay, and feed market news service.

Data for domestic and Canadian rye in United States are for stocks on the Saturday nearest the 1st day of the month; for Canadian and United States rye in Canada data are for stocks on the Friday nearest the 1st day of the month.

TABLE 39.—*Rye: Average price per bushel received by producers, United States, 1925-26 to 1934-35*

| Year         | July 15      | Aug. 15      | Sept. 15     | Oct. 15      | Nov. 15      | Dec. 15      | Jan. 15      | Feb. 15      | Mar. 15      | Apr. 15      | May 15       | June 15      | Weighted average |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------------------|
|              | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i>     |
| 1925-26..... | 92.3         | 92.8         | 81.9         | 74.1         | 73.4         | 86.8         | 88.2         | 82.5         | 73.4         | 73.8         | 72.5         | 76.0         | 79.1             |
| 1926-27..... | 80.7         | 86.1         | 81.6         | 82.4         | 83.0         | 82.4         | 83.6         | 88.4         | 86.4         | 83.2         | 90.1         | 94.9         | 83.0             |
| 1927-28..... | 91.2         | 80.6         | 81.4         | 81.0         | 84.0         | 87.8         | 88.0         | 89.5         | 96.0         | 99.8         | 111.5        | 105.8        | 83.5             |
| 1928-29..... | 99.2         | 83.6         | 81.8         | 87.1         | 86.3         | 87.2         | 87.9         | 91.5         | 91.5         | 86.0         | 79.1         | 75.7         | 88.6             |
| 1929-30..... | 85.3         | 91.8         | 89.2         | 89.9         | 85.5         | 83.4         | 85.7         | 78.3         | 68.4         | 68.7         | 63.8         | 60.7         | 86.7             |
| 1930-31..... | 43.6         | 53.0         | 53.1         | 47.6         | 41.6         | 41.1         | 37.4         | 34.9         | 34.5         | 32.8         | 33.0         | 31.4         | 44.0             |
| 1931-32..... | 33.0         | 32.5         | 33.2         | 33.6         | 41.4         | 36.8         | 36.8         | 35.3         | 37.7         | 35.6         | 33.4         | 28.8         | 33.6             |
| 1932-33..... | 22.0         | 23.3         | 23.6         | 22.3         | 22.1         | 21.1         | 22.7         | 21.9         | 22.8         | 30.1         | 35.9         | 43.5         | 27.6             |
| 1933-34..... | 78.2         | 58.8         | 61.4         | 52.7         | 55.4         | 51.9         | 53.6         | 54.2         | 53.1         | 52.8         | 51.9         | 53.2         | 61.8             |
| 1934-35..... | 61.8         | 73.9         | 79.1         | 73.0         | 71.9         | 74.4         | .....        | .....        | .....        | .....        | .....        | .....        | 174.6            |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop marketing season. Data for earlier years in 1923 Yearbook, table 43. Only monthly prices are comparable.

TABLE 40.—*Rye, including flour in terms of grain: International trade, average 1925-26 to 1929-30, annual 1930-31 to 1933-34*

| Country                                  | Year beginning July        |                      |                      |                      |                      |                      |                      |                      |                      |                      |
|--|----------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|  | Average 1925-26 to 1929-30 |                      | 1930-31              |                      | 1931-32              |                      | 1932-33              |                      | 1933-34 <sup>1</sup> |                      |
|  | Ex-ports                   | Im-ports             | Ex-ports             | Im-ports             | Ex-ports             | Im-ports             | Ex-ports             | Im-ports             | Ex-ports             | Im-ports             |
| <b>PRINCIPAL EXPORTING COUNTRIES</b>     | <i>1,000 bushels</i>       | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> |
| Germany.....                             | 15,493                     | 13,815               | 4,518                | 1,233                | 4,393                | 18,075               | 6,385                | 15,808               | 16,113               | 4,964                |
| United States.....                       | 14,556                     | 0                    | 227                  | 0                    | 909                  | 0                    | 311                  | 0                    | 21                   | 11,949               |
| Union of Soviet Socialist Republics..... | 7,406                      | 0                    | 23,084               | 0                    | 43,267               | 0                    | 9,551                | 0                    | 5,760                | 0                    |
| Poland.....                              | 6,597                      | 2,453                | 15,743               | 10                   | 4,839                | 226                  | 12,985               | 386                  | 23,824               | 411                  |
| Hungary.....                             | 6,559                      | 1                    | 3,319                | 0                    | 2,712                | 0                    | 3,003                | 0                    | 6,481                | 0                    |
| Canada.....                              | 6,328                      | 129                  | 1,968                | 18                   | 6,689                | 11                   | 5,132                | 6                    | 2,799                | 6                    |
| Argentina.....                           | 4,611                      | 0                    | 1,610                | 0                    | 9,272                | 0                    | 5,306                | 0                    | 3,949                | 0                    |
| Rumania.....                             | 1,133                      | 12                   | 2,267                | 0                    | 3,034                | 0                    | 44                   | 30                   | 30                   | 30                   |
| Bulgaria.....                            | 486                        | 0                    | 2,444                | 0                    | 1,841                | 0                    | 123                  | 0                    | 32                   | 0                    |
| Yugoslavia.....                          | 176                        | 6                    | 2                    | 6                    | 0                    | 0                    | 1                    | 0                    | .....                | .....                |
| Algeria.....                             | 50                         | 3                    | 64                   | 0                    | 50                   | 0                    | 42                   | 0                    | .....                | 0                    |
| <b>Total.....</b>                        | <b>63,300</b>              | <b>16,419</b>        | <b>61,246</b>        | <b>1,267</b>         | <b>77,056</b>        | <b>18,312</b>        | <b>42,833</b>        | <b>16,200</b>        | <b>58,079</b>        | <b>17,330</b>        |
| <b>PRINCIPAL IMPORTING COUNTRIES</b>     |                            |                      |                      |                      |                      |                      |                      |                      |                      |                      |
| Denmark.....                             | 414                        | 8,109                | 423                  | 13,468               | 319                  | 8,230                | 312                  | 10,683               | 269                  | 11,006               |
| Norway.....                              | .....                      | 7,027                | .....                | 5,216                | .....                | 6,294                | .....                | 5,046                | .....                | 5,663                |
| Finland.....                             | 10                         | 6,193                | 5                    | 3,136                | 4                    | 2,061                | 1                    | 2,647                | 0                    | 2,316                |
| Czechoslovakia.....                      | 963                        | 4,701                | 1,737                | 719                  | 886                  | 9,832                | 1,024                | 896                  | 625                  | 43                   |
| Austria.....                             | 103                        | 4,645                | 86                   | 4,592                | 60                   | 3,165                | 77                   | 1,129                | 70                   | 494                  |
| Netherlands.....                         | 528                        | 4,525                | 1,454                | 11,267               | 805                  | 7,047                | 172                  | 8,629                | 40                   | 9,726                |
| Latvia.....                              | 25                         | 3,203                | 1                    | 471                  | 1                    | 179                  | 1                    | 0                    | .....                | .....                |
| Sweden.....                              | 537                        | 3,008                | 20                   | 1,131                | 50                   | 2,188                | 52                   | 739                  | 37                   | 61                   |
| Estonia.....                             | .....                      | 2,244                | .....                | 515                  | .....                | 42                   | .....                | 0                    | .....                | 0                    |
| Belgium.....                             | 43                         | 1,625                | 240                  | 6,304                | 1,030                | 4,875                | 720                  | 4,936                | 91                   | 9,055                |
| France.....                              | 31                         | 1,535                | 19                   | 4,286                | 1                    | 3,333                | 1                    | 1,063                | 1                    | 219                  |
| United Kingdom.....                      | 98                         | 696                  | 13                   | 845                  | 12                   | 377                  | 9                    | 180                  | 14                   | 263                  |
| Italy.....                               | 9                          | 336                  | 1                    | 1,323                | 1                    | 336                  | 1                    | 555                  | 0                    | 298                  |
| Switzerland.....                         | 0                          | 91                   | 0                    | 296                  | 1                    | 177                  | 0                    | 615                  | 0                    | 237                  |
| <b>Total.....</b>                        | <b>2,761</b>               | <b>47,988</b>        | <b>3,999</b>         | <b>53,069</b>        | <b>3,170</b>         | <b>48,176</b>        | <b>2,370</b>         | <b>36,623</b>        | <b>1,148</b>         | <b>39,003</b>        |

<sup>1</sup> Preliminary.

<sup>2</sup> Imports for consumption.

<sup>3</sup> Monthly Crop Report and Agricultural Statistics, International Institute of Agriculture.

<sup>4</sup> Year beginning Aug. 1; International Yearbook of Agricultural Statistics.

<sup>5</sup> Calendar year.

Bureau of Agricultural Economics, official sources except where otherwise noted.

TABLE 41.—*Rye No. 2: Weighted average price per bushel of reported cash sales, Minneapolis, 1925-26 to 1934-35*

| Year    | July         | Aug.         | Sept.        | Oct.         | Nov.         | Dec.         | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | Weighted average |
|---------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------------------|
|         | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i>     |
| 1925-26 | 95           | 100          | 83           | 77           | 81           | 98           | 99           | 91           | 81           | 85           | 83           | 89           | 88               |
| 1926-27 | 102          | 97           | 93           | 95           | 94           | 94           | 99           | 102          | 99           | 99           | 109          | 111          | 98               |
| 1927-28 | 104          | 92           | 92           | 92           | 99           | 102          | 103          | 106          | 114          | 124          | 128          | 123          | 104              |
| 1928-29 | 111          | 94           | 94           | 94           | 98           | 97           | 101          | 105          | 100          | 89           | 85           | 84           | 95               |
| 1929-30 | 107          | 98           | 97           | 97           | 95           | 98           | 91           | 78           | 66           | 68           | 65           | 57           | 90               |
| 1930-31 | 55           | 60           | 55           | 49           | 43           | 44           | 38           | 37           | 36           | 35           | 36           | 37           | 51               |
| 1931-32 | 37           | 38           | 39           | 41           | 51           | 45           | 46           | 46           | 47           | 45           | 39           | 32           | 42               |
| 1932-33 | 32           | 34           | 34           | 32           | 31           | 31           | 33           | 32           | 35           | 43           | 52           | 62           | 41               |
| 1933-34 | 83           | 72           | 71           | 62           | 62           | 60           | 64           | 61           | 59           | 57           | 60           | 69           | 69               |
| 1934-35 | 74           | 89           | 87           | 76           | 76           | 80           |              |              |              |              |              |              |                  |

Bureau of Agricultural Economics; computed by weighting selling price by number of car lots sold, as reported in Minneapolis Daily Market Record.

Chicago prices, 1909-10 to 1926-27 appear in 1927 Yearbook, table 46. Minneapolis prices, 1900-10 to 1924-25, appear in 1930 Yearbook, table 43.

TABLE 42.—*Corn: Acreage, production, value, and foreign trade, United States, 1866-1934*

| Year | Acreage harvested | Average yield per acre | Production                            |                    | Price per bushel received by producers Dec. 1 <sup>1</sup> | Farm value, basis Dec. 1 price | Price per bushel at Chicago, year beginning November <sup>2</sup> | Foreign trade including meal year beginning July <sup>3</sup> |               |                          |                          |
|------|-------------------|------------------------|---------------------------------------|--------------------|--|--------------------------------|---|---|---------------|--------------------------|--------------------------|
|      |                   |                        | In grain equivalent on entire acreage | Harvested as grain |  |                                |   | Domestic exports  | Imports       | Net exports <sup>4</sup> |                          |
|      |                   |                        |                                       |                    |  |                                |   |   |               | Total                    | Percentage of production |
|      | 1,000 acres       | Bushels                | 1,000 bushels                         | 1,000 bushels      | Cents  | 1,000 dollars                  | Cents   | 1,000 bushels   | 1,000 bushels | 1,000 bushels            | Percent                  |
| 1866 | 30,017            | 24.3                   | 730,814                               |                    |  |                                | 89  | 16,027  | 82            | 15,954                   | 2.2                      |
| 1867 | 32,116            | 24.7                   | 793,905                               |                    |  |                                | 88  | 12,494  | 50            | 12,446                   | 1.6                      |
| 1868 | 35,116            | 26.2                   | 919,590                               |                    |  |                                | 67  | 8,287   | 91            | 8,196                    | .9                       |
| 1869 |                   |                        | 730,245                               |                    |  |                                |   |   |               |                          |                          |
| 1869 | 35,833            | 21.8                   | 782,084                               |                    |  |                                | 75  | 2,140   | 90            | 2,051                    | .3                       |
| 1870 | 38,388            | 29.3                   | 1,124,775                             |                    |  |                                | 51  | 10,674  | 111           | 10,562                   | .9                       |
| 1871 | 42,002            | 27.2                   | 1,141,715                             |                    |  |                                | 40  | 35,727  | 59            | 35,668                   | 3.1                      |
| 1872 | 43,584            | 29.4                   | 1,279,369                             |                    |  |                                | 35  | 40,154  | 63            | 40,091                   | 3.1                      |
| 1873 | 44,084            | 22.9                   | 1,008,326                             |                    |  |                                | 60  | 35,986  | 76            | 35,910                   | 3.6                      |
| 1874 | 47,640            | 22.2                   | 1,058,778                             |                    |  |                                | 68  | 30,025  | 39            | 29,986                   | 2.8                      |
| 1875 | 52,446            | 27.7                   | 1,450,276                             |                    |  |                                | 46  | 50,911  | 53            | 50,858                   | 3.5                      |
| 1876 | 55,277            | 26.7                   | 1,478,173                             |                    |  |                                | 45  | 72,653  | 33            | 72,620                   | 4.9                      |
| 1877 | 58,709            | 25.8                   | 1,515,862                             |                    |  |                                | 40  | 87,192  | 15            | 87,178                   | 5.8                      |
| 1878 | 59,659            | 26.2                   | 1,564,537                             |                    |  |                                | 34  | 87,885  | 37            | 87,848                   | 5.6                      |
| 1879 | 68,569            | 23.1                   | 1,754,598                             |                    |  |                                |   |   |               |                          |                          |
| 1879 | 62,220            | 28.2                   | 1,751,984                             |                    |  |                                | 38  | 99,572  | 66            | 99,507                   | 5.7                      |
| 1880 | 62,545            | 27.3                   | 1,706,673                             |                    |  |                                | 46  | 93,648  | 76            | 93,572                   | 5.5                      |
| 1881 | 63,026            | 19.8                   | 1,244,803                             |                    |  |                                | 67  | 44,341  | 75            | 44,266                   | 3.6                      |
| 1882 | 66,157            | 26.5                   | 1,755,272                             |                    |  |                                | 55  | 41,656  | 38            | 41,617                   | 2.4                      |
| 1883 | 68,168            | 24.2                   | 1,652,148                             |                    |  |                                | 54  | 42,259  | 6             | 46,253                   | 2.8                      |
| 1884 | 68,834            | 28.3                   | 1,947,838                             |                    |  |                                | 43  | 52,876  | 5             | 52,872                   | 2.7                      |
| 1885 | 71,854            | 28.6                   | 2,057,807                             |                    |  |                                | 39  | 64,830  | 20            | 64,810                   | 3.1                      |
| 1886 | 73,911            | 24.1                   | 1,782,767                             |                    |  |                                | 38  | 41,369  | 31            | 41,337                   | 2.3                      |
| 1887 | 73,266            | 21.9                   | 1,604,549                             |                    |  |                                | 48  | 25,361  | 38            | 25,323                   | 1.6                      |
| 1888 | 77,474            | 29.1                   | 2,250,632                             |                    |  |                                | 35  | 70,842  | 3             | 70,839                   | 3.1                      |
| 1889 | 77,088            | 29.4                   | 2,255,528                             |                    |  |                                |   |   |               |                          |                          |
| 1889 | 77,656            | 28.5                   | 2,294,289                             |                    |  |                                | 36  | 103,419   | 2             | 103,417                  | 4.5                      |
| 1890 | 74,785            | 22.1                   | 1,650,446                             |                    |  |                                | 58  | 32,042  | 2             | 32,039                   | 1.9                      |
| 1891 | 78,855            | 29.6                   | 2,335,804                             |                    |  |                                | 47  | 76,062  | 16            | 76,046                   | 3.3                      |
| 1892 | 76,914            | 24.7                   | 1,897,412                             |                    |  |                                | 41  | 47,122  | 2             | 47,120                   | 2.5                      |
| 1893 | 79,832            | 23.8                   | 1,900,401                             |                    |  |                                | 41  | 66,490  | 3             | 66,487                   | 3.5                      |
| 1894 | 80,069            | 20.2                   | 1,615,016                             |                    |  |                                | 44  | 28,585  | 17            | 28,569                   | 1.8                      |
| 1895 | 90,479            | 28.0                   | 2,534,762                             |                    |  |                                | 26  | 101,100   | 5             | 101,096                  | 4.0                      |
| 1896 | 89,074            | 30.0                   | 2,671,048                             |                    |  |                                | 25  | 178,817   | 7             | 178,811                  | 6.7                      |
| 1897 | 89,965            | 25.4                   | 2,287,628                             |                    |  |                                | 30  | 212,056   | 4             | 212,052                  | 9.3                      |
| 1898 | 87,784            | 25.8                   | 2,351,323                             |                    |  |                                | 34  | 177,255   | 4             | 177,252                  | 7.5                      |
| 1899 | 84,914            | 28.1                   | 2,408,324                             |                    |  |                                |   |   |               |                          |                          |
| 1899 | 84,561            | 28.0                   | 2,445,796                             |                    |  |                                | 36  | 213,123   | 3             | 213,121                  | 8.1                      |
| 1900 | 84,852            | 28.1                   | 2,461,978                             |                    |  |                                | 43  | 181,405   | 6             | 181,400                  | 6.8                      |
| 1901 | 94,422            | 18.2                   | 1,715,752                             |                    |  |                                | 62  | 28,029  | 19            | 28,011                   | 1.6                      |

See footnotes at end of table.

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TABLE 42.—*Corn: Acreage, production, value, and foreign trade, United States, 1866-1934—Continued*

| Year              | Acreage harvested | Average yield per acre | Production                            |                    | Price per bushel received by producers Dec. 1 <sup>1</sup> | Farm value, basis Dec. 1 price | Price per bushel at Chicago, year beginning November 2 <sup>2</sup> | Foreign trade including meal year beginning July 3 <sup>3</sup> |               |                            |                          |
|-------------------|-------------------|------------------------|---------------------------------------|--------------------|--|--------------------------------|---|---|---------------|----------------------------|--------------------------|
|                   |                   |                        | In grain equivalent on entire acreage | Harvested as grain |  |                                |   | Domestic exports  | Imports       | Net exports 4 <sup>4</sup> |                          |
|                   |                   |                        |                                       |                    |  |                                |   |   |               | Total                      | Percentage of production |
|                   | 1,000 acres       | Bushels                | 1,000 bushels                         | 1,000 bushels      | Cents  | 1,000 dollars                  | Cents   | 1,000 bushels   | 1,000 bushels | 1,000 bushels              | Percent                  |
| 1902              | 97,177            | 28.5                   | 2,773,954                             |                    |  |                                | 47  | 76,639  | 41            | 76,598                     | 2.3                      |
| 1903              | 93,555            | 28.9                   | 2,515,093                             |                    |  |                                | 49  | 58,222  | 17            | 58,210                     | 2.3                      |
| 1904              | 95,228            | 28.2                   | 2,686,624                             |                    |  |                                | 48  | 90,233  | 16            | 90,278                     | 3.4                      |
| 1905              | 95,746            | 30.9                   | 2,954,148                             |                    |  |                                | 44  | 119,894   | 11            | 119,883                    | 4.1                      |
| 1906              | 95,624            | 31.7                   | 3,032,910                             |                    |  |                                | 50  | 86,368  | 11            | 86,358                     | 2.3                      |
| 1907              | 96,094            | 27.2                   | 2,613,797                             |                    |  |                                | 63  | 55,061  | 20            | 55,044                     | 2.1                      |
| 1908              | 95,285            | 26.0                   | 2,566,742                             |                    |  |                                | 65  | 37,665  | 258           | 37,437                     | 1.5                      |
| 1909              | 98,382            | 25.9                   | 2,552,190                             |                    |  |                                |   |   |               |                            |                          |
| 1909              | 100,260           | 26.1                   | 2,611,157                             |                    |  |                                | 59  | 33,128  | 118           | 33,010                     | 1.5                      |
| 1910              | 102,267           | 27.9                   | 2,852,794                             |                    |  |                                | 53  | 65,615  | 53            | 65,562                     | 2.3                      |
| 1911              | 101,360           | 34.4                   | 2,474,685                             |                    |  |                                | 71  | 41,797  | 54            | 41,744                     | 1.7                      |
| 1912              | 101,451           | 29.1                   | 2,947,842                             |                    |  |                                | 53  | 59,780  | 903           | 49,913                     | 1.7                      |
| 1913              | 100,299           | 22.7                   | 2,272,540                             |                    |  |                                | 70  | 10,726  | 12,368        | 1,639                      |                          |
| 1914              | 97,799            | 25.8                   | 2,523,750                             |                    |  |                                | 70  | 50,668  | 9,899         | 40,816                     | 1.6                      |
| 1915              | 100,623           | 28.1                   | 2,829,044                             |                    |  |                                | 79  | 30,897  | 5,211         | 34,761                     | 1.2                      |
| 1916              | 100,561           | 24.1                   | 2,425,206                             |                    |  |                                | 111   | 66,753  | 2,270         | 65,092                     | 2.7                      |
| 1917              | 110,893           | 26.2                   | 2,908,242                             |                    |  |                                | 163   | 49,073  | 3,197         | 45,950                     | 1.6                      |
| 1918              | 102,195           | 23.9                   | 2,441,249                             |                    |  |                                | 162   | 23,019  | 3,346         | 19,684                     | .8                       |
| 1919 <sup>6</sup> | 87,772            | 26.7                   |                                       | 2,345,839          |  |                                |   |   |               |                            |                          |
| 1919              | 98,145            | 27.3                   | 2,678,541                             | 2,341,870          | 150.7  | 4,035,445                      | 159   | 16,729  | 10,283        | 6,500                      | .2                       |
| 1920              | 101,359           | 30.3                   | 3,070,604                             | 2,695,085          | 61.0   | 1,872,065                      | 62  | 70,906  | 5,791         | 66,116                     | 2.2                      |
| 1921              | 103,155           | 28.4                   | 2,928,442                             | 2,556,924          | 52.7   | 1,544,722                      | 55  | 179,490   | 142           | 179,374                    | 6.1                      |
| 1922              | 100,345           | 27.0                   | 2,707,306                             | 2,229,496          | 75.2   | 2,036,831                      | 73  | 96,595  | 182           | 96,415                     | 3.6                      |
| 1923              | 101,123           | 28.4                   | 2,875,292                             | 2,429,551          | 83.5   | 2,400,513                      | 88  | 23,135  | 240           | 22,896                     | .8                       |
| 1924 <sup>6</sup> | 82,599            | 22.2                   |                                       | 1,873,839          |  |                                |   |   |               |                            |                          |
| 1924              | 100,420           | 22.9                   | 2,298,071                             | 1,899,751          | 105.3  | 2,420,928                      | 106   | 9,791   | 4,618         | 5,348                      | .2                       |
| 1925              | 101,331           | 28.2                   | 2,853,088                             | 2,413,364          | 69.9   | 1,995,031                      | 75  | 24,783  | 637           | 24,150                     | .8                       |
| 1926              | 99,452            | 25.9                   | 2,574,511                             | 2,133,401          | 75.3   | 1,938,403                      | 87  | 19,819  | 1,098         | 18,731                     | .7                       |
| 1927              | 98,357            | 27.2                   | 2,677,671                             | 2,249,928          | 84.9   | 2,273,599                      | 101   | 19,409  | 5,463         | 14,364                     | .5                       |
| 1928              | 100,336           | 27.1                   | 2,714,535                             | 2,282,638          | 84.3   | 2,288,041                      | 92  | 41,874  | 490           | 41,387                     | 1.5                      |
| 1929 <sup>6</sup> | 85,162            | 25.6                   |                                       | 2,150,769          |  |                                |   |   |               |                            |                          |
| 1929              | 97,806            | 25.9                   | 2,535,546                             | 2,140,215          | 79.8   | 2,024,132                      | 83  | 10,281  | 497           | 9,785                      | .4                       |
| 1930              | 101,083           | 20.4                   | 2,065,273                             | 1,733,429          | 59.4   | 1,227,659                      | 60  | 3,317   | 1,747         | 1,572                      | .1                       |
| 1931              | 105,945           | 24.4                   | 2,588,509                             | 2,229,688          | 32.1   | 830,725                        | 36  | 3,969   | 386           | 3,583                      | .1                       |
| 1932              | 108,628           | 26.8                   | 2,906,873                             | 2,514,613          | 31.8   | 925,277                        | 35  | 8,775   | 195           | 8,580                      | .3                       |
| 1933              | 103,260           | 22.8                   | 2,351,658                             | 2,038,706          | 52.2   | 1,227,221                      | 52  | 4,965   | 244           | 4,721                      | .2                       |
| 1934 <sup>7</sup> | 87,486            | 15.8                   | 1,380,718                             | 1,107,887          | 84.7   | 1,163,961                      |   |   |               |                            |                          |

<sup>1</sup> Calculations of average price and farm value not completed. Beginning with 1919 prices are weighted average prices for crop-marketing season.

<sup>2</sup> Prices 1866-67 to 1898-99 are averages of the weekly quotations for No. 2 or better in annual reports of Chicago Board of Trade; subsequent prices are compiled from the Chicago Daily Trade Bulletin, average of daily prices weighted by car-lot sales, No. 3 yellow.

<sup>3</sup> Compiled from Commerce and Navigation of the United States, 1866-1917; Foreign Commerce and Navigation of the United States, 1918; Monthly Summary of Foreign Commerce of the United States, June issues 1919-26; January and June issues, 1927-34 and official records of the Bureau of Foreign and Domestic Commerce. Corn—General imports 1866-1909 and 1912-33; imports for consumption 1910 and 1911, and 1934. Corn meal—Imports for consumption, 1866-1934. Corn meal converted to terms of grain on the basis of 4 bushels of corn to a barrel of meal.

<sup>4</sup> Total exports (domestic plus foreign) minus total imports. Beginning 1933-34 net exports are domestic exports minus imports for consumption. (See introductory text.)

<sup>5</sup> Net imports, i. e., total imports minus total exports (domestic plus foreign).

<sup>6</sup> Corn harvested for grain; total acreage of corn in 1924 is 98,401,627 acres; 1929, 97,740,740 acres.

<sup>7</sup> Preliminary.

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Production figures are estimates of the Crop Reporting Board, revised. See introductory text. Italic figures are census returns.



TABLE 43.—*Corn: Acreage, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934*

| State and division  | Acreage harvested   |                |                   | Yield per acre      |              |                   | Production          |                  |                   | Price for crop of— |                   |
|---------------------|---------------------|----------------|-------------------|---------------------|--------------|-------------------|---------------------|------------------|-------------------|--------------------|-------------------|
|                     | Average,<br>1927-31 | 1933           | 1934 <sup>1</sup> | Average,<br>1922-31 | 1933         | 1934 <sup>1</sup> | Average,<br>1927-31 | 1933             | 1934 <sup>1</sup> | 1933               | 1934 <sup>1</sup> |
|                     | 1,000<br>acres      | 1,000<br>acres | 1,000<br>acres    | Bush-<br>els        | Bush-<br>els | Bush-<br>els      | 1,000<br>bushels    | 1,000<br>bushels | 1,000<br>bushels  | Cents              | Cents             |
| Maine.....          | 13                  | 17             | 16                | 39.4                | 41.0         | 41.0              | 538                 | 697              | 656               | 69                 | 101               |
| New Hampshire.....  | 13                  | 15             | 15                | 42.5                | 40.0         | 41.0              | 562                 | 600              | 615               | 77                 | 104               |
| Vermont.....        | 62                  | 63             | 67                | 40.7                | 40.0         | 42.0              | 2,617               | 2,520            | 2,814             | 65                 | 103               |
| Massachusetts.....  | 41                  | 38             | 37                | 42.5                | 40.0         | 41.0              | 1,686               | 1,520            | 1,517             | 80                 | 92                |
| Rhode Island.....   | 9                   | 10             | 10                | 40.5                | 41.0         | 41.0              | 346                 | 410              | 410               | 88                 | 93                |
| Connecticut.....    | 51                  | 53             | 52                | 40.3                | 39.0         | 41.0              | 2,042               | 2,067            | 2,132             | 78                 | 93                |
| New York.....       | 567                 | 571            | 617               | 34.1                | 31.0         | 34.5              | 19,072              | 17,701           | 21,286            | 65                 | 91                |
| New Jersey.....     | 172                 | 167            | 166               | 40.4                | 37.0         | 43.0              | 6,581               | 6,179            | 7,138             | 66                 | 87                |
| Pennsylvania.....   | 1,232               | 1,280          | 1,216             | 40.0                | 39.5         | 43.5              | 45,570              | 50,560           | 52,896            | 62                 | 84                |
| North Atlantic..... | 2,159               | 2,214          | 2,196             | 38.5                | 37.2         | 40.7              | 79,014              | 82,254           | 89,464            | 62.0               | 87.2              |
| Ohio.....           | 3,489               | 3,364          | 2,927             | 36.2                | 33.5         | 31.5              | 121,397             | 112,694          | 92,200            | 50                 | 79                |
| Indiana.....        | 4,476               | 4,314          | 3,796             | 34.5                | 29.5         | 24.8              | 146,379             | 127,263          | 94,141            | 47                 | 80                |
| Illinois.....       | 8,965               | 8,324          | 7,159             | 35.2                | 27.0         | 20.5              | 302,578             | 224,748          | 146,760           | 50                 | 83                |
| Michigan.....       | 1,277               | 1,365          | 1,392             | 29.6                | 31.0         | 24.0              | 34,013              | 42,315           | 33,408            | 55                 | 85                |
| Wisconsin.....      | 2,006               | 2,228          | 2,384             | 32.8                | 35.0         | 31.0              | 64,895              | 77,980           | 73,904            | 53                 | 80                |
| Minnesota.....      | 4,461               | 4,846          | 4,507             | 31.0                | 29.5         | 17.0              | 134,848             | 142,937          | 76,619            | 44                 | 83                |
| Iowa.....           | 11,279              | 11,375         | 8,760             | 38.0                | 40.0         | 23.0              | 413,751             | 455,000          | 201,480           | 50                 | 85                |
| Missouri.....       | 6,085               | 6,019          | 4,815             | 26.6                | 23.5         | 5.5               | 150,609             | 141,446          | 26,482            | 45                 | 100               |
| North Dakota.....   | 1,028               | 1,334          | 1,401             | 21.5                | 15.0         | 3.5               | 20,200              | 20,010           | 4,904             | 43                 | 93                |
| South Dakota.....   | 4,977               | 3,873          | 2,827             | 21.3                | 10.6         | 4.5               | 95,748              | 41,054           | 12,722            | 47                 | 96                |
| Nebraska.....       | 9,506               | 10,431         | 6,676             | 24.1                | 22.5         | 3.2               | 230,002             | 234,698          | 21,363            | 41                 | 97                |
| Kansas.....         | 6,644               | 6,994          | 3,777             | 19.8                | 11.5         | 2.8               | 137,700             | 80,431           | 10,576            | 44                 | 103               |
| North Central.....  | 64,196              | 64,467         | 50,421            | 30.0                | 26.4         | 15.8              | 1,852,208           | 1,700,596        | 794,559           | 47.4               | 84.0              |
| Delaware.....       | 138                 | 145            | 141               | 27.8                | 25.0         | 34.5              | 3,782               | 3,625            | 4,864             | 60                 | 79                |
| Maryland.....       | 507                 | 560            | 515               | 31.6                | 29.0         | 33.0              | 15,187              | 16,240           | 16,995            | 61                 | 84                |
| Virginia.....       | 1,502               | 1,571          | 1,461             | 22.9                | 23.5         | 24.5              | 33,611              | 36,918           | 35,794            | 68                 | 85                |
| West Virginia.....  | 439                 | 464            | 441               | 26.4                | 30.0         | 27.5              | 11,290              | 13,920           | 12,128            | 69                 | 86                |
| North Carolina..... | 2,139               | 2,392          | 2,440             | 18.6                | 18.5         | 19.5              | 40,713              | 44,252           | 47,580            | 73                 | 87                |
| South Carolina..... | 1,490               | 1,573          | 1,730             | 14.0                | 14.5         | 12.0              | 21,215              | 22,808           | 20,760            | 75                 | 93                |
| Georgia.....        | 3,512               | 3,740          | 3,927             | 10.7                | 10.5         | 10.0              | 37,678              | 39,270           | 39,270            | 71                 | 84                |
| Florida.....        | 645                 | 673            | 639               | 11.2                | 8.0          | 10.0              | 6,373               | 5,384            | 6,390             | 71                 | 80                |
| South Atlantic..... | 10,372              | 11,118         | 11,294            | 16.5                | 16.4         | 16.3              | 169,848             | 182,417          | 183,781           | 70.1               | 85.8              |
| Kentucky.....       | 2,900               | 2,727          | 2,618             | 23.2                | 25.0         | 24.0              | 63,954              | 68,175           | 62,832            | 58                 | 79                |
| Tennessee.....      | 2,854               | 2,810          | 2,641             | 21.2                | 23.5         | 22.3              | 58,880              | 66,035           | 58,894            | 60                 | 79                |
| Alabama.....        | 2,770               | 3,031          | 3,425             | 13.1                | 12.2         | 14.6              | 35,799              | 36,978           | 47,950            | 78                 | 82                |
| Mississippi.....    | 2,068               | 2,390          | 2,748             | 15.0                | 15.0         | 14.3              | 31,919              | 35,850           | 40,121            | 72                 | 84                |
| Arkansas.....       | 1,907               | 2,013          | 2,053             | 16.3                | 13.5         | 7.5               | 30,424              | 27,176           | 15,398            | 66                 | 96                |
| Louisiana.....      | 1,200               | 1,198          | 1,354             | 14.8                | 13.0         | 12.0              | 18,030              | 15,574           | 16,248            | 67                 | 89                |
| Oklahoma.....       | 3,162               | 2,861          | 2,117             | 16.4                | 7.5          | 5.5               | 53,843              | 21,458           | 11,644            | 55                 | 96                |
| Texas.....          | 4,683               | 5,422          | 5,097             | 16.7                | 13.8         | 9.0               | 81,615              | 74,824           | 45,873            | 62                 | 93                |
| South Central.....  | 21,544              | 22,452         | 22,053            | 17.4                | 15.4         | 13.6              | 374,463             | 346,070          | 298,960           | 63.7               | 84.4              |
| Montana.....        | 134                 | 215            | 133               | 14.6                | 11.5         | 5.0               | 1,933               | 2,472            | 665               | 57                 | 98                |
| Idaho.....          | 39                  | 50             | 38                | 37.3                | 39.0         | 40.0              | 1,478               | 1,950            | 1,520             | 57                 | 91                |
| Wyoming.....        | 176                 | 226            | 131               | 15.6                | 11.0         | 5.0               | 2,633               | 2,486            | 655               | 41                 | 109               |
| Colorado.....       | 1,614               | 2,004          | 842               | 14.0                | 11.0         | 4.0               | 24,119              | 22,044           | 3,368             | 40                 | 102               |
| New Mexico.....     | 244                 | 238            | 136               | 14.2                | 14.0         | 8.0               | 3,747               | 3,332            | 1,088             | 57                 | 110               |
| Arizona.....        | 33                  | 41             | 35                | 16.7                | 18.0         | 14.0              | 571                 | 738              | 490               | 75                 | 109               |
| Utah.....           | 15                  | 21             | 19                | 25.6                | 23.0         | 16.0              | 407                 | 493              | 304               | 72                 | 102               |
| Nevada.....         | 2                   | 2              | 2                 | 23.7                | 22.0         | 20.0              | 48                  | 44               | 40                | 73                 | 109               |
| Washington.....     | 33                  | 41             | 34                | 35.9                | 33.0         | 33.0              | 1,233               | 1,556            | 1,122             | 58                 | 83                |
| Oregon.....         | 62                  | 71             | 57                | 32.4                | 34.0         | 32.5              | 2,046               | 2,414            | 1,852             | 68                 | 82                |
| California.....     | 83                  | 100            | 95                | 32.0                | 28.0         | 30.0              | 2,557               | 2,800            | 2,850             | 64                 | 106               |
| Western.....        | 2,435               | 3,009          | 1,522             | 16.3                | 13.4         | 9.2               | 40,773              | 40,321           | 13,954            | 48.4               | 98.5              |
| United States.....  | 100,706             | 103,260        | 87,486            | 25.7                | 22.8         | 15.8              | 2,516,307           | 2,351,658        | 1,380,718         | 52.2               | 84.7              |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 44.—*Corn: Utilization for grain, silage, hogging down, grazing, and forage, by States, 1933 and 1934*

| State and division  | 1933        |               |             |                  |   | 1934 <sup>1</sup> |               |             |                  |   |
|---------------------|-------------|---------------|-------------|------------------|---|-------------------|---------------|-------------|------------------|---|
|                     | For grain   |               | For silage  |                  | Hogging down, grazing, and forage acreage | For grain         |               | For silage  |                  | Hogging down, grazing, and forage acreage |
|                     | Acreage     | Production    | Acreage     | Production       |   | Acreage           | Production    | Acreage     | Production       |   |
|                     | 1,000 acres | 1,000 bushels | 1,000 acres | 1,000 short tons | 1,000 acres                               | 1,000 acres       | 1,000 bushels | 1,000 acres | 1,000 short tons | 1,000 acres                               |
| Maine.....          | 3           | 123           | 10          | 105              | 4   | 2                 | 82            | 10          | 100              | 4   |
| New Hampshire.....  | 3           | 120           | 10          | 115              | 2   | 3                 | 123           | 10          | 107              | 2   |
| Vermont.....        | 8           | 320           | 46          | 506              | 9   | 7                 | 294           | 50          | 525              | 10  |
| Massachusetts.....  | 9           | 360           | 21          | 231              | 8   | 9                 | 369           | 20          | 220              | 8   |
| Rhode Island.....   | 1           | 41            | 6           | 60               | 3   | 1                 | 41            | 7           | 70               | 2   |
| Connecticut.....    | 14          | 546           | 33          | 363              | 6   | 13                | 533           | 32          | 352              | 7   |
| New York.....       | 124         | 3,844         | 357         | 3,213            | 90  | 113               | 3,898         | 377         | 3,582            | 127                                       |
| New Jersey.....     | 130         | 4,810         | 30          | 264              | 7   | 131               | 5,633         | 28          | 280              | 7   |
| Pennsylvania.....   | 967         | 38,196        | 250         | 2,250            | 63  | 920               | 40,020        | 231         | 2,310            | 65  |
| North Atlantic..... | 1,259       | 48,360        | 763         | 7,107            | 192                                       | 1,199             | 50,993        | 765         | 7,546            | 232                                       |
| Ohio.....           | 3,048       | 103,632       | 111         | 755              | 205                                       | 2,631             | 84,192        | 103         | 824              | 193                                       |
| Indiana.....        | 3,996       | 117,882       | 115         | 748              | 203                                       | 3,519             | 89,734        | 110         | 682              | 167                                       |
| Illinois.....       | 7,700       | 207,900       | 250         | 1,375            | 374                                       | 6,207             | 133,450       | 372         | 1,786            | 580                                       |
| Michigan.....       | 886         | 28,352        | 187         | 1,402            | 292                                       | 802               | 20,852        | 250         | 1,625            | 340                                       |
| Wisconsin.....      | 927         | 33,372        | 1,083       | 8,231            | 218                                       | 680               | 22,440        | 1,198       | 8,286            | 506                                       |
| Minnesota.....      | 3,260       | 96,170        | 480         | 3,600            | 1,106                                     | 2,119             | 46,618        | 816         | 3,672            | 1,572                                     |
| Iowa.....           | 10,261      | 410,440       | 274         | 2,486            | 840                                       | 5,910             | 159,570       | 570         | 3,135            | 2,280                                     |
| Missouri.....       | 5,417       | 130,008       | 60          | 360              | 542                                       | 1,444             | 11,552        | 241         | 651              | 3,130                                     |
| North Dakota.....   | 133         | 2,128         | 148         | 370              | 1,053                                     | 28                | 210           | 196         | 196              | 1,177                                     |
| South Dakota.....   | 2,203       | 31,944        | 189         | 378              | 1,481                                     | 441               | 4,863         | 142         | 199              | 2,244                                     |
| Nebraska.....       | 9,866       | 221,985       | 95          | 428              | 470                                       | 1,689             | 10,014        | 734         | 1,101            | 4,273                                     |
| Kansas.....         | 5,548       | 66,376        | 454         | 1,589            | 992                                       | 189               | 756           | 869         | 1,564            | 2,719                                     |
| North Central.....  | 53,245      | 1,450,389     | 3,446       | 21,702           | 7,776                                     | 25,639            | 584,371       | 5,601       | 23,821           | 19,181                                    |
| Delaware.....       | 140         | 3,500         | 8           | 26               | 2   | 136               | 4,692         | 3           | 28               | 2   |
| Maryland.....       | 525         | 15,488        | 26          | 260              | 9   | 478               | 15,774        | 26          | 266              | 9   |
| Virginia.....       | 1,501       | 35,274        | 46          | 480              | 24  | 1,381             | 33,834        | 60          | 510              | 20  |
| West Virginia.....  | 428         | 13,288        | 26          | 221              | 10  | 398               | 11,144        | 25          | 230              | 13  |
| North Carolina..... | 2,300       | 42,550        | 12          | 66               | 80  | 2,366             | 46,137        | 14          | 77               | 60  |
| South Carolina..... | 1,537       | 22,286        | 3           | 12               | 33  | 1,707             | 20,484        | 3           | 11               | 20  |
| Georgia.....        | 3,619       | 38,000        | 6           | 27               | 115                                       | 3,801             | 38,010        | 6           | 21               | 120                                       |
| Florida.....        | 646         | 5,168         | 2           | 9                | 25  | 613               | 6,130         | 2           | 8                | 24  |
| South Atlantic..... | 10,666      | 175,534       | 124         | 1,081            | 298                                       | 10,880            | 176,205       | 141         | 1,171            | 273                                       |
| Kentucky.....       | 2,624       | 65,600        | 16          | 120              | 87  | 2,475             | 59,400        | 17          | 119              | 126                                       |
| Tennessee.....      | 2,745       | 64,508        | 14          | 91               | 51  | 2,581             | 57,556        | 12          | 78               | 48  |
| Alabama.....        | 3,069       | 36,710        | 4           | 8                | 18  | 3,400             | 47,600        | 5           | 12               | 20  |
| Mississippi.....    | 2,356       | 35,340        | 2           | 10               | 32  | 2,708             | 39,537        | 3           | 14               | 37  |
| Arkansas.....       | 1,929       | 26,042        | 2           | 8                | 82  | 1,845             | 14,784        | 2           | 6                | 203                                       |
| Louisiana.....      | 1,181       | 15,353        | 2           | 9                | 15  | 1,332             | 15,984        | 2           | 8                | 20  |
| Oklahoma.....       | 2,434       | 18,255        | 14          | 42               | 413                                       | 1,681             | 10,086        | 13          | 32               | 423                                       |
| Texas.....          | 5,251       | 72,464        | 8           | 22               | 163                                       | 4,382             | 43,820        | 11          | 22               | 704                                       |
| South Central.....  | 21,529      | 334,272       | 62          | 310              | 861                                       | 20,407            | 288,767       | 65          | 291              | 1,581                                     |
| Montana.....        | 34          | 408           | 5           | 10               | 176                                       | 10                | 160           | 2           | 3                | 121                                       |
| Idaho.....          | 33          | 1,287         | 9           | 70               | 8   | 18                | 720           | 8           | 64               | 12  |
| Wyoming.....        | 90          | 1,080         | 4           | 20               | 132                                       | 39                | 281           | 10          | 28               | 82  |
| Colorado.....       | 1,783       | 20,504        | 64          | 320              | 157                                       | 337               | 2,022         | 90          | 225              | 415                                       |
| New Mexico.....     | 186         | 2,604         | 3           | 21               | 49  | 102               | 918           | 3           | 12               | 31  |
| Arizona.....        | 29          | 522           | 4           | 32               | 8   | 24                | 360           | 3           | 15               | 8   |
| Utah.....           | 10          | 230           | 5           | 40               | 6   | 5                 | 80            | 9           | 54               | 5   |
| Nevada.....         | 1           | 22            | 1           | 8                | 0   | 1                 | 20            | 1           | 7                | 0   |
| Washington.....     | 16          | 608           | 9           | 86               | 16  | 15                | 495           | 8           | 80               | 11  |
| Oregon.....         | 35          | 1,190         | 21          | 130              | 15  | 26                | 845           | 19          | 108              | 13  |
| California.....     | 53          | 1,696         | 21          | 178              | 26  | 50                | 1,650         | 21          | 178              | 24  |
| Western.....        | 2,270       | 30,151        | 146         | 915              | 583                                       | 627               | 7,551         | 173         | 774              | 722                                       |
| United States.....  | 88,999      | 2,038,706     | 4,541       | 31,115           | 9,720                                     | 58,752            | 1,107,887     | 6,745       | 33,603           | 21,989                                    |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 45.—Corn: Acreage, yield per acre, and production in specified countries, average 1921–22 to 1925–26, annual 1931–32 to 1934–35

| Country  | Acreage                             |                |                |                |                      | Yield per acre                      |         |         |         |                      | Production                          |                  |                  |                  |                  |
|--|-------------------------------------|----------------|----------------|----------------|----------------------|-------------------------------------|---------|---------|---------|----------------------|-------------------------------------|------------------|------------------|------------------|------------------|
|  | Average<br>1921-22<br>to<br>1926-26 | 1931-32        | 1932-33        | 1933-34        | 1934-35 <sup>1</sup> | Average<br>1921-22<br>to<br>1926-26 | 1931-32 | 1932-33 | 1933-34 | 1934-35 <sup>1</sup> | Average<br>1921-22<br>to<br>1926-26 | 1931-32          | 1932-33          | 1933-34          | 1934-35          |
| NORTHERN HEMISPHERE  |                                     |                |                |                |                      |                                     |         |         |         |                      |                                     |                  |                  |                  |                  |
| North America:   | 1,000<br>acres                      | 1,000<br>acres | 1,000<br>acres | 1,000<br>acres | 1,000<br>acres       | Bushels                             | Bushels | Bushels | Bushels | Bushels              | 1,000<br>bushels                    | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels |
| Canada:  | 283                                 | 192            | 180            | 187            | 161                  | 44.3                                | 41.3    | 38.9    | 38.9    | 40.9                 | 12,974                              | 5,440            | 5,057            | 5,054            | 6,589            |
| United States:   | 101,275                             | 105,948        | 108,668        | 103,207        | 87,486               | 27.0                                | 24.4    | 23.8    | 22.8    | 15.8                 | 2,732,439                           | 2,688,509        | 2,900,873        | 2,351,638        | 1,350,718        |
| Mexico:  | 7,519                               | 8,346          | 8,013          | 7,963          | 7,298                | 11.3                                | 10.1    | 9.7     | 9.6     | 9.2                  | 84,882                              | 84,195           | 77,691           | 75,738           | 66,978           |
| Guatemala:   | 300                                 | 362            | 363            |                |                      | 19.9                                | 14.4    | 15.3    |         |                      | 7,772                               | 5,216            | 5,563            |                  |                  |
| Total North American countries<br>reporting area and production, all<br>years: | 109,087                             | 114,426        | 116,811        | 111,300        | 94,945               | 25.0                                | 23.4    | 25.6    | 21.9    | 15.3                 | 2,830,295                           | 2,678,153        | 2,980,621        | 2,432,450        | 1,454,285        |
| Estimated North American total:  | 110,200                             | 116,000        | 118,400        | 112,800        | 96,500               |                                     |         |         |         |                      | 2,849,000                           | 2,704,000        | 3,016,000        | 2,400,000        | 1,462,000        |
| Europe:  | 830                                 | 855            | 840            | 832            | 822                  | 17.8                                | 23.8    | 19.2    | 20.6    | 24.9                 | 14,754                              | 24,622           | 16,115           | 17,122           | 20,440           |
| France:  | 1,167                               | 1,053          | 1,102          | 1,067          |                      | 22.2                                | 25.1    | 24.8    | 24.4    |                      | 25,933                              | 26,388           | 27,286           | 25,997           |                  |
| Spain:   | 762                                 | 939            |                |                |                      | 16.5                                | 18.7    | 15.6    |         |                      | 11,795                              | 17,563           | 14,442           | 12,283           |                  |
| Portugal:  | 3,792                               | 3,460          | 3,579          | 3,536          | 3,655                | 25.0                                | 22.2    | 33.2    | 28.8    | 34.4                 | 94,793                              | 70,618           | 118,718          | 101,986          |                  |
| Italy:   | 147                                 | 162            | 165            | 160            |                      | 26.1                                | 32.8    | 31.5    | 33.8    | 30.9                 | 8,690                               | 4,990            | 6,176            | 6,378            |                  |
| Austria:   | 390                                 | 344            | 331            | 316            | 369                  | 26.3                                | 26.1    | 36.8    | 38.0    | 27.1                 | 10,444                              | 8,965            | 12,176           | 6,018            | 9,897            |
| Czechoslovakia:  | 2,426                               | 2,720          | 2,905          | 2,816          | 2,755                | 24.1                                | 22.0    | 33.0    | 25.3    | 30.0                 | 58,353                              | 69,748           | 95,744           | 71,229           | 9,728            |
| Hungary:   | 4,769                               | 5,901          | 6,228          | 6,518          | 6,548                | 23.0                                | 21.4    | 30.3    | 21.6    | 28.8                 | 109,399                             | 188,689          | 158,690          | 140,863          | 82,739           |
| Yugoslavia:  | 461                                 | 620            | 656            | 645            | 686                  | 14.4                                | 10.1    | 12.8    | 16.7    | 16.1                 | 6,503                               | 6,248            | 8,406            | 10,760           | 9,448            |
| Greece:  | 1,458                               | 1,682          | 1,839          | 1,793          | 1,658                | 14.4                                | 20.8    | 19.0    | 20.8    | 19.5                 | 21,021                              | 34,988           | 34,899           | 37,440           | 32,262           |
| Bulgaria:  | 8,799                               | 11,749         | 11,802         | 11,928         | 12,368               | 16.0                                | 20.3    | 20.0    | 15.0    | 15.3                 | 140,515                             | 238,700          | 235,980          | 170,268          | 188,969          |
| Rumania:   | 1,197                               | 243            | 240            | 225            | 225                  | 14.9                                | 16.9    | 17.3    | 9.8     |                      | 2,926                               | 4,069            | 4,163            | 2,200            |                  |
| Poland:  | 5,238                               | 9,941          | 9,056          | 9,777          |                      | 21.3                                | 18.8    | 14.8    | 19.3    |                      | 111,550                             | 136,967          | 136,932          | 138,981          |                  |
| U. S. S. R., European and Asiatic:   |                                     |                |                |                |                      |                                     |         |         |         |                      |                                     |                  |                  |                  |                  |
| Total European countries reporting<br>area and production, all years:          | 23,051                              | 27,473         | 28,345         | 28,546         | 28,911               | 19.9                                | 21.1    | 25.3    | 20.0    | 23.0                 | 459,472                             | 580,990          | 715,880          | 570,094          | 663,635          |
| Estimated European total, exclud-<br>ing U. S. S. R.                           | 25,200                              | 29,900         | 30,900         | 30,800         | 31,200               |                                     |         |         |         |                      | 500,000                             | 632,000          | 765,000          | 613,000          | 710,000          |
| Africa:  | 105                                 | 161            | 164            | 113            | 128                  | 23.9                                | 16.9    | 24.8    | 23.6    | 28.9                 | 2,507                               | 2,794            | 4,070            | 2,667            | 3,554            |
| Kenya:   | 487                                 | 864            | 866            | 887            | 1,013                | 8.2                                 | 6.2     | 5.5     | 6.2     | 8.0                  | 3,620                               | 5,363            | 4,077            | 5,528            | 8,149            |
| Morocco:   | 1,968                               | 2,104          | 2,043          | 1,638          | 1,629                | 34.8                                | 36.6    | 37.2    | 35.5    | 37.5                 | 69,096                              | 78,201           | 76,053           | 58,101           | 61,020           |
| Egypt:   |                                     |                |                |                |                      |                                     |         |         |         |                      |                                     |                  |                  |                  |                  |
| Estimated African total:   | 3,100                               | 5,200          | 5,200          | 4,600          | 4,700                |                                     |         |         |         |                      | 84,000                              | 110,000          | 107,000          | 88,000           | 94,000           |



TABLE 46.—*Corn: Production, world and selected countries, 1900-1901 to 1934-35*

| Crop year                  | Esti-<br>mated<br>world,<br>exclud-<br>ing<br>Russia | Esti-<br>mated<br>Europe,<br>exclud-<br>ing<br>Russia | Selected countries         |                            |                            |                            |                            |                            |                            |
|----------------------------|--|---|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
|                            |  |   | United<br>States           | Argen-<br>tina             | Ruma-<br>nia               | Yugo-<br>slavia            | Italy                      | Brazil                     | Russia <sup>1</sup>        |
|                            | <i>Million<br/>bushels</i>                           | <i>Million<br/>bushels</i>                            | <i>Million<br/>bushels</i> | <i>Million<br/>bushels</i> | <i>Million<br/>bushels</i> | <i>Million<br/>bushels</i> | <i>Million<br/>bushels</i> | <i>Million<br/>bushels</i> | <i>Million<br/>bushels</i> |
| 1900-1901.....             | 3,750  | 445   | 2,662                      | 99                         | 85                         | 18                         | 88                         | -----                      | 34                         |
| 1901-2.....                | 2,865  | 497   | 1,716                      | 84                         | 117                        | 19                         | 100                        | -----                      | 68                         |
| 1902-3.....                | 3,841  | 391   | 2,774                      | 149                        | 68                         | 18                         | 71                         | -----                      | 49                         |
| 1903-4.....                | 3,722  | 459   | 2,515                      | 175                        | 80                         | 19                         | 89                         | -----                      | 51                         |
| 1904-5.....                | 3,663  | 279   | 2,687                      | 141                        | 20                         | 9                          | 90                         | -----                      | 26                         |
| 1905-6.....                | 4,110  | 403   | 2,954                      | 195                        | 59                         | 21                         | 97                         | -----                      | 34                         |
| 1906-7.....                | 4,230  | 533   | 3,033                      | 72                         | 131                        | 28                         | 93                         | -----                      | 92                         |
| 1907-8.....                | 3,862  | 441   | 2,614                      | 136                        | 58                         | 18                         | 88                         | -----                      | 64                         |
| 1908-9.....                | 3,811  | 465   | 2,587                      | 177                        | 79                         | 21                         | 96                         | -----                      | 82                         |
| 1909-10.....               | 3,985  | 499   | 2,611                      | 175                        | 70                         | 34                         | 102                        | -----                      | 55                         |
| 1910-11.....               | 4,118  | 564   | 2,853                      | 28                         | 104                        | 29                         | 104                        | -----                      | 102                        |
| 1911-12.....               | 3,838  | 502   | 2,475                      | 296                        | 111                        | 27                         | 95                         | -----                      | 95                         |
| 1912-13.....               | 4,271  | 547   | 2,948                      | 197                        | 104                        | -----                      | 101                        | -----                      | 94                         |
| 1913-14.....               | 3,770  | 576   | 2,273                      | 263                        | 115                        | -----                      | 111                        | -----                      | 84                         |
| 1914-15.....               | 4,041  | 559   | 2,524                      | 325                        | 103                        | -----                      | 105                        | -----                      | <sup>2</sup> 90            |
| 1915-16.....               | 4,186  | 520   | 2,829                      | 161                        | 86                         | -----                      | 122                        | -----                      | <sup>2</sup> 72            |
| 1916-17.....               | 3,635  | 389   | 2,425                      | 59                         | -----                      | -----                      | 82                         | 204                        | <sup>2</sup> 62            |
| 1917-18.....               | 4,021  | 351   | 2,908                      | 171                        | -----                      | -----                      | 83                         | 95                         | -----                      |
| 1918-19.....               | 3,517  | 299   | 2,441                      | 224                        | -----                      | -----                      | 77                         | 87                         | -----                      |
| 1919-20.....               | 4,105  | 454   | 2,679                      | 259                        | <sup>3</sup> 141           | -----                      | 86                         | 197                        | -----                      |
| 1920-21.....               | 4,551  | 519   | 3,071                      | 230                        | 182                        | <sup>3</sup> 101           | 89                         | 186                        | 46                         |
| 1921-22.....               | 4,172  | 394   | 2,928                      | 176                        | 111                        | 74                         | 92                         | 181                        | 46                         |
| 1922-23.....               | 4,044  | 424   | 2,707                      | 176                        | 120                        | 90                         | 77                         | 202                        | 118                        |
| 1923-24.....               | 4,847  | 469   | 2,875                      | 277                        | 153                        | 85                         | 89                         | 180                        | 125                        |
| 1924-25.....               | 3,886  | 589   | 2,298                      | 186                        | 155                        | 149                        | 106                        | 162                        | 92                         |
| 1925-26.....               | 4,525  | 626   | 2,853                      | 322                        | 164                        | 149                        | 110                        | 162                        | 177                        |
| 1926-27.....               | 4,358  | 653   | 2,875                      | 321                        | 200                        | 134                        | 118                        | 164                        | 136                        |
| 1927-28.....               | 4,265  | 435   | 2,678                      | 312                        | 139                        | 83                         | 87                         | 133                        | 123                        |
| 1928-29.....               | 4,244  | 384   | 2,715                      | 252                        | 109                        | 72                         | 65                         | 194                        | 130                        |
| 1929-30.....               | 4,857  | 707   | 2,538                      | 281                        | 251                        | 163                        | 100                        | 177                        | 119                        |
| 1930-31.....               | 3,954  | 612   | 2,065                      | 420                        | 173                        | 136                        | 113                        | 200                        | 105                        |
| 1931-32.....               | 4,394  | 632   | 2,589                      | 299                        | 239                        | 126                        | 77                         | -----                      | 187                        |
| 1932-33.....               | 4,740  | 765   | 2,907                      | 268                        | 236                        | 189                        | 119                        | -----                      | 135                        |
| 1933-34.....               | 4,045  | 613   | 2,352                      | 246                        | 179                        | 141                        | 102                        | -----                      | 189                        |
| 1934-35 <sup>4</sup> ..... | -----  | 710   | 1,381                      | -----                      | 189                        | 189                        | 126                        | -----                      | -----                      |

<sup>1</sup> Includes all Russian territory reporting for the years shown.<sup>2</sup> Total Russian Empire, exclusive of the 10 Vistula Provinces of Russian Poland and the Province of Batum in Transcaucasia.<sup>3</sup> Exclusive of Russian Poland, Lithuania, parts of present Latvia and the Ukraine, and the Provinces of Batum and Elizabetpol in Transcaucasia.<sup>4</sup> Beginning this year, estimates within present boundaries of the Union of Soviet Socialist Republics, exclusive of Turkestan, Transcaucasia, and the Far East, which territory in 1924-25 produced 26,043,000 bushels.<sup>5</sup> Production in present boundaries beginning this year, therefore not comparable with earlier years.<sup>6</sup> Preliminary.

Bureau of Agricultural Economics. Official sources and International Institute of Agriculture.

Production figures refer to the year of harvest. Harvests of the Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow; thus for 1933-34 the crop harvested in the Northern Hemisphere countries in 1933 is combined with the Southern Hemisphere harvest which takes place early in 1934.

TABLE 47.—*Corn: Stocks on farms, quarterly, United States, 1926-35*

| Year      | Stocks on farms          |                          |                          |                          | Year      | Stocks on farms          |                          |                          |                          |
|-----------|--------------------------|--------------------------|--------------------------|--------------------------|-----------|--------------------------|--------------------------|--------------------------|--------------------------|
|           | Jan. 1                   | Apr. 1                   | July 1                   | Oct. 1 <sup>1</sup>      |           | Jan. 1                   | Apr. 1                   | July 1                   | Oct. 1 <sup>1</sup>      |
|           | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> |           | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> |
| 1926..... | -----                    | -----                    | -----                    | -----                    | 1931..... | 1,118,424                | 625,086                  | 312,389                  | 180,480                  |
| 1927..... | 1,459,153                | 980,489                  | 535,978                  | 263,910                  | 1932..... | 1,556,349                | 913,666                  | 527,374                  | 250,978                  |
| 1928..... | 1,446,780                | 715,281                  | 281,791                  | 87,531                   | 1933..... | 1,813,476                | 1,128,122                | 630,849                  | 317,863                  |
| 1929..... | 1,435,316                | 780,896                  | 396,267                  | 146,719                  | 1934..... | 1,433,740                | 841,468                  | 474,370                  | 266,740                  |
| 1930..... | 1,389,784                | 750,223                  | 349,481                  | 131,845                  | 1935..... | 814,017                  | 438,180                  | -----                    | -----                    |

<sup>1</sup> Includes old crop only.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 48.—*Corn: Monthly marketings by farmers, as reported by about 3,500 mills and elevators, United States, 1924-25 to 1933-34*

| Year    | Percentage of receipts during— |              |              |              |              |              |              |              |              |              |              |              |              |
|---------|--------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|         | Oct.                           | Nov.         | Dec.         | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | July         | Aug.         | Sept.        | Year         |
|         | Per-<br>cent                   | Per-<br>cent | Per-<br>cent | Per-<br>cent | Per-<br>cent | Per-<br>cent | Per-<br>cent | Per-<br>cent | Per-<br>cent | Per-<br>cent | Per-<br>cent | Per-<br>cent | Per-<br>cent |
| 1924-25 | 7.0                            | 11.1         | 13.0         | 13.6         | 9.5          | 8.1          | 6.3          | 7.8          | 4.3          | 6.6          | 6.2          | 6.5          | 100.0        |
| 1925-26 | 5.9                            | 9.3          | 14.6         | 12.1         | 10.4         | 8.5          | 5.3          | 7.1          | 8.2          | 5.1          | 7.6          | 5.9          | 100.0        |
| 1926-27 | 10.1                           | 9.1          | 12.9         | 11.7         | 10.8         | 6.9          | 4.8          | 6.1          | 9.1          | 5.7          | 6.2          | 6.6          | 100.0        |
| 1927-28 | 6.2                            | 8.6          | 15.5         | 13.8         | 11.7         | 8.9          | 5.4          | 6.6          | 5.4          | 5.1          | 6.5          | 6.3          | 100.0        |
| 1928-29 | 6.6                            | 12.5         | 16.7         | 12.9         | 11.5         | 7.4          | 3.8          | 4.3          | 7.3          | 5.8          | 5.8          | 5.4          | 100.0        |
| 1929-30 | 6.9                            | 9.3          | 13.4         | 10.9         | 10.6         | 7.4          | 7.1          | 6.9          | 6.3          | 6.6          | 7.0          | 7.6          | 100.0        |
| 1930-31 | 7.7                            | 10.5         | 14.0         | 11.0         | 10.2         | 8.2          | 7.0          | 5.8          | 6.5          | 6.5          | 7.3          | 5.3          | 100.0        |
| 1931-32 | 7.6                            | 9.9          | 11.2         | 10.2         | 10.4         | 7.6          | 7.4          | 6.4          | 5.4          | 6.2          | 8.6          | 9.1          | 100.0        |
| 1932-33 | 8.3                            | 8.1          | 8.9          | 8.0          | 7.4          | 5.1          | 8.4          | 9.1          | 10.3         | 12.4         | 6.2          | 7.5          | 100.0        |
| 1933-34 | 8.8                            | 10.9         | 9.6          | 8.0          | 6.5          | 6.7          | 3.6          | 5.1          | 6.4          | 10.8         | 14.8         | 8.8          | 100.0        |

Bureau of Agricultural Economics. Data for earlier years in 1928 yearbook, table 51.

TABLE 49.—*Corn, shelled: Receipts graded by licensed inspectors, all inspection points, total of all classes under each grade, 1924-25 to 1933-34*

| Year beginning<br>November | Grade  |         |        |        |        |        |        | Total   |
|----------------------------|--------|---------|--------|--------|--------|--------|--------|---------|
|                            | No. 1  | No. 2   | No. 3  | No. 4  | No. 5  | No. 6  | Sample |         |
|                            | Cars   | Cars    | Cars   | Cars   | Cars   | Cars   | Cars   |         |
| 1924-25                    | 7,833  | 80,883  | 56,542 | 34,431 | 31,370 | 17,252 | 12,345 | 240,706 |
| 1925-26                    | 3,358  | 59,985  | 62,757 | 51,092 | 48,348 | 40,116 | 31,473 | 297,129 |
| 1926-27                    | 1,616  | 34,390  | 57,931 | 48,217 | 50,195 | 46,180 | 31,171 | 269,700 |
| 1927-28                    | 9,682  | 87,801  | 78,352 | 47,890 | 34,638 | 27,553 | 29,006 | 314,922 |
| 1928-29                    | 25,809 | 92,285  | 73,331 | 93,367 | 40,594 | 10,400 | 7,247  | 343,033 |
| 1929-30                    | 26,394 | 85,038  | 49,806 | 50,916 | 39,995 | 19,475 | 16,580 | 288,204 |
| 1930-31                    | 18,176 | 67,781  | 70,928 | 45,629 | 14,745 | 5,262  | 3,745  | 226,266 |
| 1931-32                    | 15,469 | 91,136  | 53,076 | 22,756 | 3,987  | 3,159  | 2,465  | 192,043 |
| 1932-33                    | 12,217 | 129,825 | 63,005 | 29,343 | 6,487  | 7,218  | 6,632  | 254,727 |
| 1933-34                    | 39,099 | 117,613 | 47,066 | 14,113 | 3,953  | 2,592  | 3,064  | 227,500 |

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TABLE 50.—*Corn: Commercial stocks, 1926-27 to 1934-35*DOMESTIC CORN IN UNITED STATES<sup>1</sup>

| Year    | Oct.             | Nov.             | Dec.             | Jan.             | Feb.             | Mar.             | Apr.             | May              | June             | July             | Aug.             | Sept.            |
|---------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|         | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels |
| 1926-27 |                  |                  |                  | 36,019           | 40,670           | 47,515           | 49,759           | 39,010           | 31,607           | 38,268           | 31,782           | 23,324           |
| 1927-28 | 24,913           | 21,661           | 20,254           | 28,741           | 34,558           | 44,786           | 48,273           | 36,835           | 27,497           | 17,650           | 13,571           | 9,768            |
| 1928-29 | 6,894            | 2,032            | 6,353            | 18,565           | 28,797           | 36,927           | 37,744           | 28,863           | 15,951           | 13,740           | 9,076            | 6,340            |
| 1929-30 | 4,421            | 3,639            | 2,982            | 10,513           | 16,079           | 24,944           | 25,671           | 21,073           | 11,463           | 7,049            | 3,421            | 4,220            |
| 1930-31 | 4,855            | 4,550            | 7,332            | 17,190           | 17,383           | 20,127           | 22,167           | 19,697           | 12,337           | 8,175            | 8,363            | 9,066            |
| 1931-32 | 5,586            | 7,341            | 9,803            | 12,664           | 14,176           | 18,528           | 22,693           | 22,032           | 20,903           | 16,117           | 11,144           | 14,739           |
| 1932-33 | 18,705           | 27,973           | 26,537           | 30,633           | 33,855           | 36,808           | 36,151           | 31,958           | 38,780           | 48,618           | 63,274           | 57,764           |
| 1933-34 | 59,791           | 62,709           | 65,053           | 70,540           | 68,946           | 69,424           | 66,314           | 57,343           | 46,257           | 38,312           | 45,504           | 61,873           |
| 1934-35 | 63,803           | 58,482           | 50,166           |                  |                  |                  |                  |                  |                  |                  |                  |                  |

UNITED STATES CORN IN CANADA<sup>1</sup>

| Year    | Oct.  | Nov.   | Dec.   | Jan.   | Feb.  | Mar.  | Apr.  | May   | June  | July  | Aug.  | Sept. |
|---------|-------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
|         | 2,010 | 1,994  | 2,263  | 1,891  | 1,598 | 1,312 | 976   | 626   | 1,634 | 1,337 | 818   | 510   |
| 1926-27 |       |        |        | 2,147  | 1,715 | 1,738 | 1,403 | 1,781 | 1,452 | 1,184 | 1,706 | 1,188 |
| 1927-28 | 2,010 | 1,994  | 2,263  | 1,891  | 1,598 | 1,312 | 976   | 626   | 1,634 | 1,337 | 818   | 510   |
| 1928-29 | 534   | 252    | 268    | 580    | 737   | 601   | 356   | 1,759 | 1,602 | 911   | 746   | 480   |
| 1929-30 | 763   | 847    | 375    | 230    | 180   | 152   | 120   | 428   | 745   | 697   | 135   | 147   |
| 1930-31 | 950   | 750    | 723    | 571    | 481   | 423   | 378   | 476   | 995   | 176   | 195   | 557   |
| 1931-32 | 500   | 1,143  | 1,106  | 918    | 884   | 872   | 843   | 1,051 | 992   | 817   | 749   | 759   |
| 1932-33 | 2,826 | 3,399  | 4,211  | 3,799  | 3,017 | 2,221 | 1,562 | 1,387 | 2,809 | 3,326 | 7,116 | 7,076 |
| 1933-34 | 7,707 | 10,065 | 10,830 | 10,159 | 8,866 | 7,822 | 6,839 | 5,829 | 3,647 | 2,833 | 3,021 | 5,809 |
| 1934-35 | 6,026 | 6,297  | 6,047  |        |       |       |       |       |       |       |       |       |

<sup>1</sup> Includes domestic corn in store in public and private elevators in 41 markets and corn afloat in vessels or barges in harbors of lake and seaboard ports. Does not include corn in transit either by rail or water, stocks in mills, or mill elevators attached to mills, or private stocks of corn intended for local use.<sup>2</sup> Includes United States corn in store at 15 Canadian points or afloat in vessels or barges in the harbors of lake and seaboard ports. Does not include corn in transit to Canadian ports.

Bureau of Agricultural Economics; compiled from weekly reports to the grain, hay, and feed market news service.

Data for domestic corn in the United States are for stocks on the Saturday nearest the first day of the month; for United States corn in Canada data are for stocks on the Friday nearest the 1st day of the month.

TABLE 51.—*Corn: Supply and distribution in continental United States, 1926-27 to 1934-35*

| Year beginning<br>October | Supply           |                                 |                          |  |                           |                           | Distribution                     |                         |                          |
|---------------------------|------------------|---------------------------------|--------------------------|--|---------------------------|---------------------------|----------------------------------|-------------------------|--------------------------|
|                           | Produc-<br>tion  | Stocks<br>on<br>farms<br>Oct. 1 | Farm<br>supply<br>Oct. 1 | Com-<br>mercial<br>stocks<br>Oct. 1 <sup>1</sup> | Total<br>stocks<br>Oct. 1 | Total<br>supply<br>Oct. 1 | Net<br>ex-<br>ports <sup>2</sup> | Disap-<br>pear-<br>ance | Stocks<br>end of<br>year |
|                           | 1,000<br>bushels | 1,000<br>bushels                | 1,000<br>bushels         | 1,000<br>bushels                                 | 1,000<br>bushels          | 1,000<br>bushels          | 1,000<br>bushels                 | 100 0<br>bushels        | 1 000<br>bushels         |
| 1926-27-----              | 2,574,511        | 262,910                         | 2,837,421                | 18,999   | 281,909                   | 2,856,420                 | 14,341                           | 2,625,487               | 216,592                  |
| 1927-28-----              | 2,677,671        | 191,679                         | 2,869,350                | 24,913   | 216,592                   | 2,894,263                 | 17,619                           | 2,782,219               | 94,425                   |
| 1928-29-----              | 2,714,535        | 87,631                          | 2,802,066                | 6,894  | 94,425                    | 2,808,960                 | 41,399                           | 2,616,421               | 151,140                  |
| 1929-30-----              | 2,535,546        | 146,719                         | 2,682,265                | 4,421  | 151,140                   | 2,686,686                 | 8,119                            | 2,541,967               | 136,700                  |
| 1930-31-----              | 2,065,273        | 131,845                         | 2,197,118                | 4,855  | 136,700                   | 2,201,973                 | 1,733                            | 2,034,194               | 166,046                  |
| 1931-32-----              | 2,588,509        | 160,460                         | 2,748,969                | 5,586  | 166,046                   | 2,754,555                 | 4,058                            | 2,480,814               | 268,683                  |
| 1932-33-----              | 2,906,873        | 250,978                         | 3,157,851                | 18,705   | 269,683                   | 3,176,536                 | 8,713                            | 2,790,189               | 377,654                  |
| 1933-34-----              | 2,351,658        | 317,868                         | 2,669,521                | 59,791   | 377,654                   | 2,729,812                 | 3,980                            | 2,394,539               | 330,543                  |
| 1934-35-----              | 1,380,718        | 266,740                         | 1,647,453                | 63,803   | 330,543                   | 1,711,261                 | -----                            | -----                   | -----                    |

<sup>1</sup> For Oct. 1, 1926, Bradstreets' visible supply.<sup>2</sup> Includes corn meal.

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TABLE 52.—*Corn: Weighted average price per bushel of reported cash sales, Chicago, Kansas City, and six markets combined, 1925-26 to 1934-35*

| Grade, market,<br>and year                                    | Nov.         | Dec.         | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | July         | Aug.         | Sept.        | Oct.         | Weight-<br>ed aver-<br>age |
|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------------------|
| <b>No. 3 Yellow,<br/>Chicago:</b>                             | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i>               |
| 1925-26-----  | 83           | 76           | 79           | 75           | 72           | 71           | 71           | 70           | 78           | 80           | 79           | 77           | 75                         |
| 1926-27-----  | 71           | 75           | 74           | 73           | 68           | 71           | 87           | 99           | 102          | 109          | 97           | 84           | 87                         |
| 1927-28-----  | 84           | 86           | 89           | 95           | 99           | 108          | 108          | 103          | 106          | 102          | 100          | 96           | 101                        |
| 1928-29-----  | 84           | 83           | 93           | 94           | 94           | 90           | 87           | 91           | 99           | 101          | 101          | 95           | 92                         |
| 1929-30-----  | 88           | 88           | 85           | 82           | 80           | 82           | 79           | 79           | 82           | 99           | 94           | 82           | 83                         |
| 1930-31-----  | 71           | 69           | 65           | 61           | 60           | 58           | 56           | 58           | 57           | 46           | 42           | 38           | 60                         |
| 1931-32-----  | 43           | 37           | 37           | 34           | 33           | 32           | 31           | 30           | 32           | 32           | 30           | 26           | 36                         |
| 1932-33-----  | 25           | 23           | 24           | 23           | 26           | 34           | 42           | 43           | 56           | 51           | 47           | 40           | 35                         |
| 1933-34-----  | 44           | 47           | 50           | 49           | 49           | 47           | 51           | 53           | 64           | 76           | 80           | 78           | 52                         |
| 1934-35-----  | 83           | 93           | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----                      |
| <b>No. 3 Yellow,<br/>Kansas City:</b>                         | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i>               |
| 1925-26-----  | 75           | 74           | 75           | 70           | 67           | 69           | 71           | 72           | 81           | 83           | 80           | 77           | 74                         |
| 1926-27-----  | 74           | 75           | 74           | 72           | 73           | 73           | 91           | 97           | 103          | 105          | 96           | 82           | 88                         |
| 1927-28-----  | 79           | 78           | 81           | 86           | 91           | 97           | 105          | 102          | 100          | 94           | 94           | 86           | 85                         |
| 1928-29-----  | 82           | 79           | 87           | 87           | 88           | 85           | 85           | 83           | 93           | 99           | 99           | 92           | 85                         |
| 1929-30-----  | 87           | 84           | 82           | 78           | 76           | 80           | 78           | 80           | 80           | 92           | 89           | 82           | 80                         |
| 1930-31-----  | 69           | 66           | 59           | 54           | 54           | 53           | 52           | 52           | 53           | 45           | 46           | 40           | 55                         |
| 1931-32-----  | 46           | 39           | 39           | 36           | 34           | 34           | 34           | 33           | 35           | 33           | 29           | 24           | 37                         |
| 1932-33-----  | 24           | 22           | 23           | 22           | 26           | 33           | 39           | 40           | 52           | 50           | 44           | 38           | 38                         |
| 1933-34-----  | 43           | 43           | 45           | 45           | 45           | -----        | -----        | 57           | -----        | 78           | 81           | 80           | -----                      |
| 1934-35-----  | 91           | 96           | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----                      |
| <b>6 markets, all<br/>classes and<br/>grades:<sup>1</sup></b> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i>               |
| 1925-26-----  | 71.0         | 68.3         | 69.5         | 63.2         | 64.6         | 63.4         | 68.0         | 66.9         | 76.3         | 78.3         | 76.5         | 73.2         | 69.0                       |
| 1926-27-----  | 67.3         | 65.9         | 65.2         | 62.7         | 60.9         | 67.0         | 83.0         | 91.5         | 92.7         | 104.2        | 92.2         | 79.9         | 75.8                       |
| 1927-28-----  | 78.7         | 77.0         | 78.6         | 84.1         | 89.6         | 93.2         | 104.0        | 100.8        | 106.7        | 96.8         | 97.5         | 89.3         | 88.2                       |
| 1928-29-----  | 79.8         | 78.4         | 87.1         | 88.5         | 89.0         | 86.9         | 84.6         | 89.7         | 98.1         | 99.9         | 100.0        | 93.8         | 83.5                       |
| 1929-30-----  | 81.0         | 79.1         | 77.7         | 75.9         | 73.5         | 80.2         | 73.5         | 77.8         | 80.6         | 97.6         | 93.2         | 80.3         | 80.3                       |
| 1930-31-----  | 67.8         | 64.1         | 61.0         | 57.2         | 56.8         | 56.3         | 54.4         | 55.3         | 56.9         | 46.7         | 42.4         | 38.0         | 56.9                       |
| 1931-32-----  | 43.5         | 37.1         | 37.0         | 34.2         | 33.1         | 32.6         | 31.9         | 30.7         | 32.4         | 32.1         | 29.8         | 25.6         | 33.2                       |
| 1932-33-----  | 24.8         | 22.6         | 23.1         | 22.4         | 25.4         | 33.6         | 40.7         | 41.7         | 54.8         | 50.4         | 46.7         | 39.9         | 37.8                       |
| 1933-34-----  | 43.6         | 45.3         | 47.9         | 47.2         | 48.1         | 46.2         | 52.9         | 58.3         | 63.8         | 76.7         | 80.4         | 79.3         | 58.6                       |
| 1934-35-----  | 86.3         | 95.5         | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----                      |

<sup>1</sup> Compiled from daily trade papers of markets named. The markets are Chicago, St. Louis, Omaha, Kansas City, Minneapolis, and Cincinnati (not included since November 1928). The prices in this section of the table are comparable with prices paid to producers in that the latter are averages of the several prices reported which cover all classes and grades sold by producers.

Bureau of Agricultural Economics, computed by weighing selling price by number of car lots sold as reported in Chicago Daily Trade Bulletin and Kansas City Grain Market Review. Chicago prices for earlier years in 1928 Yearbook, table 60.

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TABLE 53.—*Corn: Average price per bushel received by producers, United States, 1925-26 to 1934-35*

| Year         | Oct.<br>15   | Nov.<br>15   | Dec.<br>15   | Jan.<br>15   | Feb.<br>15   | Mar.<br>15   | Apr.<br>15   | May<br>15    | June<br>15   | July<br>15   | Aug.<br>15   | Sept.<br>15  | Weight-<br>ed aver-<br>age |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------------------|
|              | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i>               |
| 1925-26..... | 83.0         | 74.6         | 70.7         | 69.6         | 63.5         | 66.6         | 65.7         | 67.1         | 68.6         | 71.5         | 79.5         | 76.2         | 69.9                       |
| 1926-27..... | 74.5         | 66.0         | 64.5         | 64.3         | 66.5         | 65.2         | 65.6         | 73.0         | 83.9         | 92.4         | 97.7         | 95.3         | 75.3                       |
| 1927-28..... | 87.6         | 73.7         | 75.1         | 75.2         | 79.0         | 86.2         | 91.9         | 102.5        | 102.2        | 102.4        | 98.2         | 95.1         | 84.9                       |
| 1928-29..... | 84.7         | 75.4         | 76.1         | 80.2         | 86.8         | 88.7         | 87.5         | 86.2         | 86.9         | 91.2         | 95.9         | 97.2         | 84.3                       |
| 1929-30..... | 91.9         | 81.0         | 78.0         | 77.3         | 77.4         | 74.5         | 78.3         | 77.7         | 79.0         | 77.1         | 90.0         | 91.7         | 79.8                       |
| 1930-31..... | 81.9         | 66.3         | 64.9         | 61.7         | 53.6         | 57.5         | 57.7         | 56.3         | 53.8         | 54.0         | 50.8         | 43.2         | 59.4                       |
| 1931-32..... | 33.4         | 36.6         | 34.5         | 33.7         | 32.4         | 32.2         | 31.4         | 30.1         | 29.4         | 29.9         | 30.2         | 28.0         | 32.1                       |
| 1932-33..... | 21.6         | 19.4         | 18.8         | 19.1         | 19.4         | 20.6         | 28.2         | 38.9         | 40.2         | 55.4         | 48.8         | 46.5         | 31.8                       |
| 1933-34..... | 38.8         | 40.6         | 42.0         | 43.9         | 45.6         | 47.1         | 47.1         | 48.6         | 56.0         | 59.2         | 72.7         | 77.4         | 52.2                       |
| 1934-35..... | 76.7         | 75.7         | 85.3         | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----        | <sup>1</sup> 84.7          |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State prices averages for the crop-marketing season. Data for earlier years in 1928 yearbook, table 59. Only monthly prices are comparable.

TABLE 54.—*Corn, yellow, La Plata: Average spot price per bushel at Buenos Aires and Liverpool, 1925-26 to 1934-35*

## BUENOS AIRES

| Year         | Nov.         | Dec.         | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | July         | Aug.         | Sept.        | Oct.         | Aver-<br>age |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|              | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> |
| 1925-26..... | 84           | 86           | 79           | 73           | 66           | 71           | 63           | 68           | 68           | 69           | 65           | 60           | 72           |
| 1926-27..... | 55           | 55           | 60           | 63           | 63           | 62           | 66           | 69           | 69           | 76           | 77           | 76           | 66           |
| 1927-28..... | 76           | 83           | 90           | 98           | 102          | 89           | 90           | 91           | 90           | 85           | 86           | 95           | 90           |
| 1928-29..... | 97           | 93           | 98           | 96           | 90           | 85           | 79           | 81           | 90           | 87           | 87           | 85           | 89           |
| 1929-30..... | 75           | 72           | 65           | 62           | 59           | 60           | 59           | 56           | 54           | 56           | 50           | 43           | 59           |
| 1930-31..... | 34           | 33           | 29           | 31           | 35           | 33           | 30           | 30           | 30           | 26           | 24           | 25           | 30           |
| 1931-32..... | 32           | 28           | 27           | 30           | 33           | 31           | 29           | 30           | 31           | 32           | 32           | 30           | 30           |
| 1932-33..... | 28           | 26           | 29           | 28           | 27           | 27           | 30           | 31           | 37           | 35           | 37           | 34           | 31           |
| 1933-34..... | 38           | 37           | 39           | 43           | 47           | 40           | 40           | 43           | 47           | 61           | 58           | 52           | 45           |
| 1934-35..... | 51           | 56           | 49           | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----        |

## LIVERPOOL

| Year         | Nov.         | Dec.         | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | July         | Aug.         | Sept.        | Oct.         | Aver-<br>age |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|              | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> |
| 1925-26..... | 107          | 110          | 98           | 91           | 89           | 94           | 91           | 87           | 100          | 99           | 90           | 93           | 96           |
| 1926-27..... | 85           | 92           | 89           | 93           | 88           | 88           | 94           | 91           | 91           | 88           | 97           | 96           | 93           |
| 1927-28..... | 97           | 104          | 110          | 119          | 127          | 129          | 127          | 125          | 130          | 119          | 106          | 115          | 117          |
| 1928-29..... | 123          | 120          | 125          | 127          | 124          | 121          | 107          | 104          | 117          | 113          | 107          | 103          | 116          |
| 1929-30..... | 96           | 89           | 83           | 79           | 75           | 91           | 85           | 76           | 84           | 90           | 77           | 63           | 82           |
| 1930-31..... | 52           | 54           | 48           | 49           | 58           | 61           | 57           | 50           | 47           | 44           | 41           | 39           | 50           |
| 1931-32..... | 44           | 37           | 39           | 42           | 46           | 47           | 46           | 42           | 43           | 43           | 42           | 39           | 42           |
| 1932-33..... | 37           | 37           | 41           | 40           | 40           | 40           | 44           | 44           | 50           | 46           | 47           | 46           | 43           |
| 1933-34..... | 56           | 63           | 59           | 56           | 62           | 61           | 56           | 57           | 60           | 75           | 72           | 64           | 62           |
| 1934-35..... | 63           | 65           | 63           | 56           | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----        |

Bureau of Agricultural Economics. Compiled as follows: Buenos Aires, Boletín Oficial de la Bolsa de Comercio de Buenos Aires, averages of daily quotations, converted at monthly average rates of exchange as given in Federal Reserve Bulletin; Liverpool, Broomhall's Corn Trade News, averages of Tuesday quotations through Feb. 19, 1929. Beginning Feb. 27, 1929, Wednesday quotations were used. Converted at monthly average rates of exchange as given in Federal Reserve Bulletin, except for period January 1926 to August 1931, when par of exchange was used. Data for earlier years in 1928 Yearbook, tables 62 and 63.



TABLE 55.—*Corn: Volume of trading in futures at contract markets, by markets and by crop years, 1924-25 to 1933-34, and monthly for 1934*

| Year and month | Chicago Board of Trade | Chicago Open Board | Kansas City     | St. Louis       | Milwaukee       | Minneapolis <sup>1</sup> | Omaha <sup>2</sup> |
|----------------|------------------------|--------------------|-----------------|-----------------|-----------------|--------------------------|--------------------|
|                | Million bushels        | Million bushels    | Million bushels | Million bushels | Million bushels | Million bushels          | Million bushels    |
| 1924-25        | 6,363.1                | 124.6              | 232.6           | 52.4            | 18.3            | -----                    | -----              |
| 1925-26        | 3,862.7                | 96.4               | 161.1           | 18.4            | 14.5            | -----                    | -----              |
| 1926-27        | 5,981.6                | 153.7              | 200.7           | 24.4            | 23.5            | -----                    | -----              |
| 1927-28        | 6,588.9                | 175.0              | 290.1           | 22.5            | 38.7            | -----                    | -----              |
| 1928-29        | 4,924.4                | 144.4              | 247.1           | 11.9            | 32.7            | -----                    | -----              |
| 1929-30        | 3,799.1                | 94.9               | 208.1           | 4.7             | 27.1            | -----                    | 0.2                |
| 1930-31        | 4,318.4                | 173.0              | 208.9           | 3.5             | 23.9            | 9.9                      | .9                 |
| 1931-32        | 1,795.6                | 42.9               | 56.9            | 1.1             | 8.7             | -----                    | 1.0                |
| 1932-33        | 3,351.4                | 55.4               | 165.0           | -----           | 13.8            | -----                    | -----              |
| 1933-34        | 3,086.4                | 44.3               | 169.9           | -----           | 13.6            | -----                    | -----              |
| 1934           |                        |                    |                 |                 |                 |                          |                    |
| January        | 110.3                  | 2.2                | 6.6             | -----           | .5              | -----                    | -----              |
| February       | 65.6                   | 1.0                | 3.1             | -----           | .5              | -----                    | -----              |
| March          | 68.2                   | .9                 | 4.3             | -----           | .5              | -----                    | -----              |
| April          | 208.6                  | 1.7                | 12.8            | -----           | 1.3             | -----                    | -----              |
| May            | 244.7                  | 3.2                | 9.1             | -----           | .9              | -----                    | -----              |
| June           | 360.5                  | 4.4                | 14.4            | -----           | 2.0             | -----                    | -----              |
| July           | 411.8                  | 3.3                | 23.5            | -----           | 1.5             | -----                    | -----              |
| August         | 555.4                  | 5.2                | 39.0            | -----           | 2.0             | -----                    | -----              |
| September      | 226.2                  | 2.2                | 13.0            | -----           | 1.4             | -----                    | -----              |
| October        | 276.6                  | 2.4                | 16.2            | -----           | 1.0             | -----                    | -----              |
| November       | 354.5                  | 2.4                | 20.2            | -----           | 1.2             | -----                    | -----              |
| December       | 310.9                  | 2.7                | 17.0            | -----           | 1.3             | -----                    | -----              |

<sup>1</sup> Trading in corn futures at Minneapolis began Jan. 30, 1922, was discontinued July 31, 1923, and resumed Jan. 31, 1931.

<sup>2</sup> Trading at Omaha began June 16, 1930, and was suspended Dec. 7, 1932.

Grain Futures Administration.

TABLE 56.—*Corn: Volume of trading in futures at all contract markets, by months and crop years, 1924-25 to 1934-35*

| Year    | Nov.            | Dec.            | Jan.            | Feb.            | Mar.            | Apr.            | May             | June            | July            | Aug.            | Sept.           | Oct.            | Total           |
|---------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|         | Million bushels | Million bushels | Million bushels | Million bushels | Million bushels | Million bushels | Million bushels | Million bushels | Million bushels | Million bushels | Million bushels | Million bushels | Million bushels |
| 1924-25 | 557             | 707             | 710             | 677             | 810             | 670             | 510             | 566             | 463             | 394             | 442             | 335             | 6,341           |
| 1925-26 | 317             | 514             | 302             | 236             | 317             | 292             | 237             | 343             | 448             | 439             | 368             | 340             | 4,153           |
| 1926-27 | 383             | 395             | 261             | 288             | 429             | 313             | 692             | 921             | 575             | 713             | 836             | 588             | 6,394           |
| 1927-28 | 473             | 681             | 511             | 698             | 733             | 745             | 699             | 567             | 553             | 616             | 372             | 467             | 7,115           |
| 1928-29 | 457             | 420             | 690             | 373             | 416             | 466             | 526             | 475             | 520             | 453             | 296             | 289             | 5,361           |
| 1929-30 | 261             | 199             | 196             | 252             | 328             | 283             | 290             | 322             | 498             | 611             | 433             | 461             | 4,134           |
| 1930-31 | 418             | 649             | 600             | 474             | 370             | 380             | 346             | 265             | 381             | 373             | 238             | 246             | 4,740           |
| 1931-32 | 361             | 209             | 119             | 156             | 142             | 204             | 110             | 102             | 98              | 178             | 122             | 106             | 1,907           |
| 1932-33 | 145             | 99              | 74              | 50              | 87              | 291             | 544             | 631             | 816             | 288             | 202             | 359             | 3,586           |
| 1933-34 | 310             | 212             | 120             | 70              | 74              | 224             | 258             | 381             | 440             | 602             | 243             | 296             | 3,230           |
| 1934-35 | 378             | 332             |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |

Grain Futures Administration.

TABLE 57.—*Corn: Wet-process grindings, 1918-19 to 1934-35*

| Year    | Nov.          | Dec.          | Jan.          | Feb.          | Mar.          | Apr.          | May           | June          | July          | Aug.          | Sept.         | Oct.          | Total         |
|---------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|         | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels |
| 1918-19 | 6,398         | 6,029         | 6,247         | 4,940         | 4,802         | 5,119         | 6,023         | 6,035         | 4,418         | 4,619         | 6,306         | 6,377         | 67,113        |
| 1919-20 | 5,207         | 5,044         | 7,282         | 5,847         | 7,051         | 3,875         | 5,509         | 6,367         | 6,495         | 6,001         | 4,192         | 3,679         | 66,549        |
| 1920-21 | 2,292         | 2,069         | 2,934         | 3,683         | 4,163         | 3,456         | 4,887         | 4,577         | 4,195         | 5,772         | 6,092         | 6,569         | 50,689        |
| 1921-22 | 6,174         | 6,001         | 5,179         | 5,946         | 6,685         | 4,271         | 4,705         | 5,323         | 5,294         | 5,650         | 6,108         | 6,733         | 68,069        |
| 1922-23 | 6,403         | 6,567         | 5,580         | 5,336         | 5,946         | 5,270         | 6,084         | 5,278         | 4,080         | 5,390         | 5,577         | 6,424         | 65,675        |
| 1923-24 | 5,576         | 5,668         | 6,757         | 7,152         | 7,835         | 6,437         | 5,027         | 5,621         | 5,835         | 6,433         | 6,368         | 6,925         | 75,835        |
| 1924-25 | 5,493         | 5,520         | 6,751         | 6,199         | 5,672         | 5,240         | 4,983         | 5,496         | 4,490         | 5,567         | 5,902         | 7,037         | 68,232        |
| 1925-26 | 6,497         | 6,488         | 7,843         | 7,218         | 5,052         | 6,100         | 5,974         | 6,735         | 6,749         | 7,289         | 6,800         | 7,604         | 83,347        |
| 1926-27 | 6,404         | 5,455         | 6,618         | 6,511         | 7,596         | 6,651         | 6,365         | 7,299         | 6,727         | 7,309         | 7,561         | 8,612         | 83,945        |
| 1927-28 | 5,064         | 6,301         | 8,330         | 8,359         | 9,244         | 8,285         | 6,921         | 6,428         | 5,895         | 5,192         | 6,541         | 7,725         | 87,203        |
| 1928-29 | 7,535         | 6,550         | 8,364         | 8,719         | 7,085         | 6,044         | 6,338         | 6,696         | 6,560         | 7,073         | 7,913         | 8,721         | 88,136        |
| 1929-30 | 6,453         | 6,054         | 7,622         | 6,568         | 6,065         | 6,015         | 6,623         | 6,100         | 6,103         | 6,864         | 6,473         | 6,253         | 77,490        |
| 1930-31 | 6,435         | 5,241         | 6,990         | 5,875         | 5,441         | 5,492         | 5,580         | 5,738         | 5,168         | 4,845         | 5,912         | 6,318         | 66,554        |
| 1931-32 | 6,348         | 4,630         | 5,180         | 5,344         | 5,045         | 4,687         | 4,921         | 4,552         | 4,343         | 5,165         | 5,981         | 5,856         | 62,002        |
| 1932-33 | 5,569         | 5,167         | 5,758         | 5,022         | 5,830         | 7,116         | 8,863         | 5,473         | 6,511         | 5,845         | 4,533         | 6,142         | 71,820        |
| 1933-34 | 3,952         | 4,501         | 4,421         | 5,020         | 5,933         | 4,953         | 5,594         | 6,997         | 5,983         | 6,792         | 5,017         | 5,501         | 69,899        |
| 1934-35 | 4,261         | -----         | -----         | -----         | -----         | -----         | -----         | -----         | -----         | -----         | -----         | -----         | -----         |

Bureau of Agricultural Economics.  
Compiled from reports of the Corn Refiners' Statistical Bureau and the Corn Industries Research Foundation.

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TABLE 58.—*Corn, including corn meal in terms of grain: International trade, average 1925-26 to 1929-30, annual 1930-31 to 1933-34*

| Country                                  | Year beginning July        |                      |                      |                      |                      |                      |                      |                      |                      |                      |
|--|----------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|  | Average 1925-26 to 1929-30 |                      | 1930-31              |                      | 1931-32              |                      | 1932-33              |                      | 1933-34 <sup>1</sup> |                      |
|  | Exports                    | Imports              | Exports              | Imports              | Exports              | Imports              | Exports              | Imports              | Exports              | Imports              |
| PRINCIPAL EXPORT-<br>ING COUNTRIES       | <i>1,000 bushels</i>       | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> |
| Argentina.....                           | 220,588                    | 0                    | 274,044              | 0                    | 386,849              | 0                    | 206,902              | 0                    | 218,542              | 0                    |
| Rumania.....                             | 30,906                     | <sup>2</sup> 21      | 38,301               | 1                    | 54,363               | 3                    | 67,919               | ( <sup>3</sup> )     |                      |                      |
| United States.....                       | 23,233                     | 1,637                | 3,317                | 1,747                | 3,969                | 386                  | 8,775                | 195                  | 4,965                | <sup>4</sup> 244     |
| Union of South Africa.....               | 19,446                     | 376                  | 21,880               | 30                   | 10,998               | 27                   | 16,786               | 25                   | 148                  | 1,269                |
| Yugoslavia.....                          | <sup>5</sup> 8,534         |                      | 14,923               |                      | 3,467                |                      | 18,389               |                      | 23,260               |                      |
| Netherlands Indies <sup>6</sup> .....    | 4,876                      | 13                   | 4,728                | 18                   | 6,555                | 20                   | 6,808                | 15                   | <sup>7</sup> 11      | <sup>7</sup> 3,127   |
| Hungary.....                             | 4,043                      | 508                  | 6,628                | 3,275                |                      | 2,665                | 5,386                | 894                  | 4,048                | 0                    |
| Bulgaria.....                            | 3,828                      |                      | 7,744                |                      | 4,721                |                      | 5,785                |                      | 4,189                |                      |
| Union of Soviet Socialist Republics..... | 3,674                      | 0                    | 2,478                | 0                    | 10,897               | 0                    | 8,491                | 0                    | 5,125                | 0                    |
| Indo-China.....                          | 3,554                      | 0                    | 4,823                | 0                    | 4,400                | 0                    | 8,486                | 0                    | <sup>8</sup> 11,969  | 0                    |
| Egypt.....                               | 1,788                      | 276                  | 14                   | 274                  | 15                   | 499                  | 369                  | 18                   | 31                   | 23                   |
| China <sup>6</sup> .....                 | 1,040                      | 0                    | 1,063                | 0                    | 1,560                | 0                    | <sup>9</sup> 533     | <sup>9</sup> 8       | 2                    | 43                   |
| Uruguay <sup>6</sup> .....               | 561                        | <sup>4</sup> 406     | 632                  | 225                  | 310                  |                      | 2                    |                      |                      |                      |
| British India.....                       | 227                        | 0                    | 2                    | 0                    | 4                    | 0                    | 4                    | 0                    | 17                   | 0                    |
| Total.....                               | 326,296                    | 3,237                | 374,577              | 5,570                | 488,231              | 3,600                | 352,615              | 1,155                | 272,307              | 4,706                |
| PRINCIPAL IMPORT-<br>ING COUNTRIES       |                            |                      |                      |                      |                      |                      |                      |                      |                      |                      |
| United Kingdom.....                      | 2,512                      | 71,650               | 2,595                | 83,280               | 3,183                | 114,684              | 302                  | 109,589              | 366                  | 112,849              |
| Netherlands.....                         | 738                        | 44,523               | 863                  | 43,785               | 518                  | 69,910               | 223                  | 58,945               | 33                   | 43,505               |
| Germany.....                             | 23                         | 42,826               | 2                    | 17,320               | 0                    | 29,723               | 1                    | 17,744               | 0                    | 10,493               |
| France.....                              | 69                         | 27,349               | 126                  | 36,788               | 124                  | 46,513               | 16                   | 40,422               | 42                   | 26,045               |
| Belgium.....                             | 1,080                      | 24,268               | 1,589                | 27,224               | 2,992                | 35,421               | 2,318                | 32,194               | 2,185                | 28,756               |
| Italy.....                               | 42                         | 23,942               | 16                   | 25,256               | 12                   | 34,747               | 1,694                | 9,718                | 2,073                | 6,603                |
| Denmark.....                             |                            | 18,676               |                      | 14,856               |                      | 40,162               |                      | 28,821               |                      | 10,199               |
| Irish Free State.....                    | 124                        | 16,159               | 63                   | 20,679               | 44                   | 28,041               |                      | 16,446               |                      | 10,854               |
| Canada.....                              | 58                         | 13,645               | 42                   | 9,819                | 113                  | 8,701                | 181                  | 7,442                | 171                  | 6,585                |
| Spain.....                               | 0                          | 13,003               | 0                    | 5,176                | 2                    | 10,617               | 0                    | 5,499                | 1                    | 2,888                |
| Czechoslovakia.....                      | 5                          | 12,088               | 3                    | 16,868               | 2                    | 24,818               | 0                    | 6,122                | 1                    | 8,342                |
| Austria.....                             | 20                         | 6,593                | 17                   | 8,214                | 6                    | 14,289               | 4                    | 17,738               | 7                    | 20,514               |
| Sweden.....                              |                            | 5,112                |                      | 8,146                |                      | 13,535               |                      | 9,373                |                      | 9,288                |
| Switzerland.....                         | 0                          | 5,099                | 2                    | 5,202                | 6                    | 7,117                | 3                    | 5,070                | 1                    | 2,935                |
| Norway.....                              |                            | 4,588                |                      | 6,101                |                      | 7,556                |                      | 6,276                |                      | 5,816                |
| Mexico <sup>6</sup> .....                | <sup>3</sup> 3             | <sup>3</sup> 2,108   | 0                    | 3,122                | 0                    | 737                  | 0                    | 1                    | 0                    | 5                    |
| Poland.....                              | 22                         | 2,008                | 0                    | 862                  | 1                    | 421                  | 0                    | 183                  | 0                    | 168                  |
| Cuba.....                                | 0                          | 1,974                | 0                    | 190                  | 0                    | 8                    | 0                    |                      | 0                    |                      |
| Japan.....                               | 0                          | <sup>3</sup> 1,702   | 0                    | 2,776                | 0                    | 3,846                | 0                    | 78                   | 0                    | 14                   |
| Greece.....                              | 0                          | 886                  | 0                    | 540                  | 0                    | 6,105                | 0                    | 1,114                | 0                    | 175                  |
| Australia.....                           | 91                         | 602                  | 2                    | 4                    | 3                    | 0                    | 2                    | 5                    |                      |                      |
| Tunis.....                               | 17                         | 424                  | 15                   | 647                  | 0                    | 634                  | 1                    | 2                    | 35                   | 182                  |
| Algeria.....                             | 14                         | 214                  | 4                    | 183                  | 27                   | 427                  | 7                    | 229                  | 55                   | 92                   |
| Finland.....                             | 0                          | 190                  | 0                    | 346                  | 0                    | 941                  | 0                    | 1,668                | 0                    | 3,128                |
| Total.....                               | 4,818                      | 339,629              | 5,339                | 342,384              | 7,033                | 498,963              | 4,752                | 374,679              | 4,970                | 309,436              |

<sup>1</sup> Preliminary.<sup>2</sup> 1 year only.<sup>3</sup> Monthly Crop Report and Agricultural Statistics, International Institute of Agriculture.<sup>4</sup> Imports for consumption.<sup>5</sup> 4-year average.<sup>6</sup> Calendar year.<sup>7</sup> Java and Madura only.<sup>8</sup> 11 months' figure.<sup>9</sup> Beginning July 1, 1932, figures do not include Manchuria.

Bureau of Agricultural Economics; official sources except where otherwise noted. Maicena or maizena is included with "corn and corn meal."

TABLE 59.—*Corn: Sales of certain products of the wet-process industry, 1927-34*

| Calendar year | Corn starch  | Corn sugar   | Corn sirup mixed and unmixed | Dextrines    | Corn oil     |              | Feed                 |                  |
|---------------|--------------|--------------|------------------------------|--------------|--------------|--------------|----------------------|------------------|
|               |              |              |                              |              | Crude        | Refined      | Gluten feed and meal | Corn-oil meal    |
|               | 1,000 pounds | 1,000 pounds | 1,000 pounds                 | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 short tons     | 1,000 short tons |
| 1927-----     | 906,476      | 896,739      | 1,034,821                    | 103,340      | 39,524       | 87,511       | 648                  | 38               |
| 1928-----     | 838,605      | 968,601      | 1,105,957                    | 110,169      | 43,507       | 74,153       | 659                  | 40               |
| 1929-----     | 879,580      | 894,986      | 1,111,153                    | 114,486      | 53,661       | 78,913       | 634                  | 27               |
| 1930-----     | 710,525      | 849,315      | 1,025,970                    | 89,720       | 40,004       | 77,924       | 576                  | 25               |
| 1931-----     | 634,974      | 802,052      | 929,842                      | 79,186       | 41,076       | 71,537       | 479                  | 21               |
| 1932-----     | 529,329      | 776,854      | 794,926                      | 62,122       | 35,127       | 76,437       | 542                  | 18               |
| 1933-----     | 741,854      | 836,650      | 1,000,941                    | 86,222       | 37,246       | 81,153       | 508                  | 23               |
| 1934-----     | 666,869      | 633,233      | 996,172                      | 69,947       | 42,400       | 87,109       | 599                  | 21               |

Bureau of Agricultural Economics; compiled from reports of the Corn Refiners' Statistical Bureau.

TABLE 60.—*Oats: Acreage, production, value, and foreign trade, United States, 1866-1934*

| Year      | Acreage harvested | Average yield per acre | Production    | Price per bushel received by producers Dec. 1 <sup>1</sup> | Farm value, basis Dec. 1 price | Price per bushel at Chicago, year beginning Aug. 1 <sup>2</sup> | Foreign trade, including meal, year beginning July <sup>3</sup> |               |                          |                       |
|-----------|-------------------|------------------------|---------------|--|--------------------------------|---|---|---------------|--------------------------|-----------------------|
|           |                   |                        |               |  |                                |   | Domestic exports  | Imports       | Net exports <sup>4</sup> |                       |
|           |                   |                        |               |  |                                |   |   |               | Total                    | Percent of production |
|           | 1,000 acres       | Bushels                | 1,000 bushels | Cents  | 1,000 dollars                  | Cents   | 1,000 bushels   | 1,000 bushels | 1,000 bushels            | Percent               |
| 1866----- | 7,935             | 29.3                   | 232,360       | -----  | -----                          | -----   | 826   | 790           | 1,199                    | 0.5                   |
| 1867----- | 8,176             | 27.2                   | 222,605       | -----  | -----                          | -----   | 123   | 986           | 825                      | -----                 |
| 1868----- | 8,897             | 25.8                   | 229,676       | -----  | -----                          | 54  | 482   | 478           | 63                       | (*)                   |
| 1869----- | -----             | -----                  | 282,107       | -----  | -----                          | -----   | -----   | -----         | -----                    | -----                 |
| 1869----- | 9,555             | 29.7                   | 284,004       | -----  | -----                          | 44  | 122   | 2,602         | 2,403                    | -----                 |
| 1870----- | 10,348            | 25.9                   | 267,947       | -----  | -----                          | 43  | 148   | 890           | 873                      | -----                 |
| 1871----- | 11,061            | 27.7                   | 306,218       | -----  | -----                          | 32  | 263   | 927           | 865                      | -----                 |
| 1872----- | 11,789            | 27.7                   | 326,759       | -----  | -----                          | 26  | 714   | 287           | 428                      | .1                    |
| 1873----- | 12,010            | 25.6                   | 306,906       | -----  | -----                          | 39  | 813   | 192           | 621                      | .2                    |
| 1874----- | 12,775            | 21.3                   | 272,501       | -----  | -----                          | 53  | 505   | 1,500         | 995                      | -----                 |
| 1875----- | 13,616            | 26.8                   | 364,967       | -----  | -----                          | 33  | 1,466   | 261           | 1,221                    | .3                    |
| 1876----- | 14,589            | 22.4                   | 327,212       | -----  | -----                          | 34  | 2,854   | 153           | 2,703                    | .8                    |
| 1877----- | 14,816            | 29.4                   | 435,330       | -----  | -----                          | 24  | 3,715   | 104           | 3,633                    | .8                    |
| 1878----- | 15,830            | 28.0                   | 443,365       | -----  | -----                          | 23  | 5,452   | 63            | 5,390                    | 1.2                   |
| 1879----- | 16,145            | 26.5                   | 407,869       | -----  | -----                          | -----   | -----   | -----         | -----                    | -----                 |
| 1879----- | 15,955            | 26.0                   | 415,440       | -----  | -----                          | 29  | 766   | 537           | 234                      | .1                    |
| 1880----- | 16,414            | 25.5                   | 417,942       | -----  | -----                          | 33  | 403   | 115           | 290                      | .1                    |
| 1881----- | 16,916            | 26.4                   | 446,125       | -----  | -----                          | 46  | 626   | 1,932         | 1,307                    | -----                 |
| 1882----- | 19,075            | 23.3                   | 540,462       | -----  | -----                          | 38  | 461   | 885           | 419                      | -----                 |
| 1883----- | 20,621            | 29.4                   | 605,576       | -----  | -----                          | 30  | 3,275   | 121           | 3,157                    | .5                    |
| 1884----- | 21,974            | 29.1                   | 640,520       | -----  | -----                          | 28  | 6,203   | 94            | 6,109                    | 1.0                   |
| 1885----- | 23,351            | 28.9                   | 674,151       | -----  | -----                          | 28  | 7,311   | 149           | 7,231                    | 1.1                   |
| 1886----- | 24,426            | 27.9                   | 682,312       | -----  | -----                          | 26  | 1,375   | 140           | 1,235                    | .2                    |
| 1887----- | 26,272            | 26.5                   | 696,175       | -----  | -----                          | 29  | 573   | 124           | 455                      | .1                    |
| 1888----- | 27,807            | 27.8                   | 773,139       | -----  | -----                          | 24  | 1,191   | 132           | 1,060                    | .1                    |

<sup>1</sup> Calculations of average price and farm value not completed. Beginning with 1919 prices are weighted average prices for crop-marketing season.<sup>2</sup> Compiled as follows: September 1868-July 1899, Chicago Board of Trade annual reports, average of weekly quotations for No. 2; beginning August 1899, Chicago Daily Trade Bulletin, average of daily quotations for No. 3, white, weighted by car-lot sales.<sup>3</sup> Compiled from Commerce and Navigation of the United States, 1866-1917; Foreign Commerce and Navigation of the United States, 1918; Monthly Summary of Foreign Commerce of the United States, June issues, 1919-26; January and June issues, 1927-34; and official records of the Bureau of Foreign and Domestic Commerce. Oats—general imports, 1866-1933, imports for consumption 1934; oatmeal—general imports, 1866-68 and 1884-1909; imports for consumption 1869-83 and 1910-34. No exports of oatmeal reported 1866-84.<sup>4</sup> Total exports (domestic plus foreign) minus total imports. Beginning 1933-34 net exports are domestic exports minus imports for consumption. (See introductory text.)<sup>5</sup> Net imports. Total imports minus total exports (domestic plus foreign).<sup>6</sup> Less than 0.05 percent.

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TABLE 60.—Oats: Acreage, production, value, and foreign trade, United States, 1886-1934—Continued

| Year | Acreage harvested | Average yield per acre | Production    | Price per bushel received by producers Dec. 1 <sup>1</sup> | Farm value, basis Dec. 1 price | Price per bushel at Chicago, year beginning Aug. 1 <sup>2</sup> | Foreign trade, including meal, year beginning July <sup>3</sup> |               |                          |                       |
|------|-------------------|------------------------|---------------|--|--------------------------------|---|---|---------------|--------------------------|-----------------------|
|      |                   |                        |               |  |                                |   | Domestic exports  | Imports       | Net exports <sup>4</sup> |                       |
|      |                   |                        |               |  |                                |   |   |               | Total                    | Percent of production |
|      | 1,000 acres       | Bushels                | 1,000 bushels | Cents  | 1,000 dollars                  | Cents   | 1,000 bushels   | 1,000 bushels | 1,000 bushels            | Percent               |
| 1889 | 28,521            | 28.6                   | 809,251       |  |                                | 23  | 15,107  | 153           | 14,959                   | 1.8                   |
| 1890 | 28,697            | 29.0                   | 831,047       |  |                                | 43  | 1,383   | 42            | 1,341                    | .2                    |
| 1891 | 28,275            | 21.5                   | 609,122       |  |                                | 30  | 10,587  | 48            | 10,546                   | 1.3                   |
| 1892 | 27,756            | 30.1                   | 836,789       |  |                                | 31  | 2,701   | 49            | 2,655                    | .4                    |
| 1893 | 28,168            | 25.6                   | 721,824       |  |                                | 31  | 6,290   | 32            | 6,258                    | .9                    |
| 1894 | 29,266            | 24.2                   | 707,129       |  |                                | 29  | 1,709   | 330           | 1,379                    | 2                     |
| 1895 | 29,556            | 25.4                   | 750,009       |  |                                | 18  | 15,157  | 67            | 15,117                   | 1.6                   |
| 1896 | 30,905            | 29.9                   | 924,858       |  |                                | 17  | 37,725  | 131           | 37,613                   | 4.9                   |
| 1897 | 30,248            | 25.6                   | 774,929       |  |                                | 23  | 73,880  | 25            | 73,855                   | 8.9                   |
| 1898 | 28,829            | 28.8                   | 829,525       |  |                                | 25  | 33,534  | 28            | 33,506                   | 4.0                   |
| 1899 | 29,327            | 28.7                   | 842,205       |  |                                | 24  | 45,049  | 55            | 44,995                   | 4.7                   |
| 1899 | 29,540            | 31.9                   | 945,389       |  |                                | 26  | 42,269  | 32            | 42,237                   | 4.5                   |
| 1900 | 29,254            | 32.0                   | 937,173       |  |                                | 43  | 13,278  | 39            | 13,240                   | 1.7                   |
| 1901 | 31,049            | 30.5                   | 945,483       |  |                                | 34  | 8,382   | 150           | 8,233                    | .8                    |
| 1902 | 30,891            | 25.9                   | 799,812       |  |                                | 38  | 1,961   | 184           | 1,857                    | .2                    |
| 1903 | 31,358            | 34.3                   | 1,076,899     |  |                                | 32  | 8,385   | 56            | 8,339                    | .8                    |
| 1904 | 32,187            | 27.5                   | 885,469       |  |                                | 31  | 48,435  | 40            | 48,395                   | 4.4                   |
| 1905 | 32,749            | 30.9                   | 1,011,556     |  |                                | 37  | 6,386   | 91            | 6,379                    | .6                    |
| 1906 | 33,426            | 33.0                   | 1,104,395     |  |                                | 50  | 2,519   | 383           | 2,195                    | .3                    |
| 1907 | 33,688            | 30.4                   | 1,022,715     |  |                                | 52  | 2,334   | 6,692         | 4,252                    |                       |
| 1907 | 34,439            | 28.3                   | 801,144       |  |                                | 42  | 2,549   | 1,063         | 1,704                    | .2                    |
| 1908 | 34,310            | 24.2                   | 829,308       |  |                                | 33  | 3,846   | 140           | 3,707                    | .3                    |
| 1909 | 35,159            | 28.6                   | 1,007,145     |  |                                | 50  | 2,678   | 2,660         | 30                       | ( <sup>5</sup> )      |
| 1909 | 35,062            | 28.9                   | 1,013,909     |  |                                | 35  | 36,455  | 765           | 35,695                   | 2.6                   |
| 1910 | 36,844            | 30.0                   | 1,106,182     |  |                                | 40  | 2,749   | 22,333        | 18,585                   |                       |
| 1911 | 37,149            | 28.8                   | 885,527       |  |                                | 50  | 100,609   | 670           | 100,158                  | 9.4                   |
| 1912 | 37,244            | 36.3                   | 1,383,273     |  |                                | 41  | 98,960  | 720           | 98,648                   | 6.9                   |
| 1913 | 37,245            | 27.9                   | 1,039,181     |  |                                | 54  | 95,106  | 841           | 94,348                   | 8.3                   |
| 1914 | 37,213            | 28.7                   | 1,066,328     |  |                                | 71  | 125,081   | 2,915         | 122,273                  | 8.5                   |
| 1915 | 38,802            | 37.0                   | 1,435,270     |  |                                | 70  | 109,005   | 838           | 108,167                  | 7.6                   |
| 1916 | 39,098            | 29.1                   | 1,138,969     |  |                                | 80  | 43,436  | 6,077         | 37,365                   | 3.4                   |
| 1917 | 41,604            | 34.7                   | 1,442,519     |  |                                | 51  | 9,391   | 3,827         | 5,564                    | .4                    |
| 1918 | 42,464            | 33.6                   | 1,428,611     |  |                                | 35  | 21,237  | 1,824         | 19,422                   | 1.9                   |
| 1919 | 37,891            | 27.8                   | 1,055,183     |  |                                | 41  | 25,413  | 340           | 25,087                   | 2.2                   |
| 1919 | 39,601            | 27.9                   | 1,106,603     | 76.7   | 848,534                        | 45  | 8,796   | 4,271         | 4,550                    | .4                    |
| 1920 | 42,732            | 33.8                   | 1,444,291     | 53.8   | 776,913                        | 50  | 16,777  | 3,067         | 13,926                   | 1.0                   |
| 1921 | 45,539            | 28.0                   | 1,045,270     | 32.2   | 338,603                        | 41  | 39,687  | 212           | 39,565                   | 2.8                   |
| 1922 | 40,324            | 28.5                   | 1,147,905     | 37.4   | 429,354                        | 43  | 15,041  | 135           | 14,988                   | 1.3                   |
| 1923 | 40,245            | 30.5                   | 1,227,184     | 40.7   | 499,701                        | 55  | 9,823   | 233           | 9,611                    | .9                    |
| 1924 | 37,650            | 34.7                   | 1,304,589     | 47.8   | 680,378                        | 44  | 16,251  | 426           | 15,825                   | 1.2                   |
| 1924 | 41,857            | 34.0                   | 1,424,422     | 47.8   | 680,378                        | 50  | 16,777  | 3,067         | 13,926                   | 1.0                   |
| 1925 | 44,240            | 31.9                   | 1,410,336     | 38.8   | 547,212                        | 41  | 39,687  | 212           | 39,565                   | 2.8                   |
| 1926 | 42,854            | 26.6                   | 1,141,941     | 40.1   | 457,766                        | 43  | 15,041  | 135           | 14,988                   | 1.3                   |
| 1927 | 40,350            | 27.1                   | 1,093,097     | 47.1   | 515,277                        | 55  | 9,823   | 233           | 9,611                    | .9                    |
| 1928 | 40,128            | 32.9                   | 1,318,977     | 40.7   | 537,186                        | 44  | 16,251  | 426           | 15,825                   | 1.2                   |
| 1929 | 38,466            | 29.7                   | 998,747       |  |                                | 44  | 7,966   | 175           | 7,680                    | .7                    |
| 1929 | 38,148            | 29.3                   | 1,118,414     | 41.9   | 468,869                        | 35  | 3,123   | 669           | 2,464                    | .2                    |
| 1930 | 39,653            | 32.2                   | 1,277,379     | 32.2   | 411,070                        | 22  | 4,437   | 85            | 4,352                    | .4                    |
| 1931 | 40,084            | 28.1                   | 1,126,913     | 21.3   | 239,953                        | 22  | 5,361   | 28            | 5,333                    | .4                    |
| 1932 | 41,420            | 30.1                   | 1,246,548     | 15.7   | 195,254                        | 36  | 1,405   | 184           | 1,251                    | .2                    |
| 1933 | 36,701            | 19.9                   | 731,500       | 33.4   | 244,128                        |   |   |               |                          |                       |
| 1934 | 30,395            | 17.4                   | 528,815       | 49.1   | 259,398                        |   |   |               |                          |                       |

See footnotes 1 to 4 on page 390.

<sup>1</sup> Net imports. Total imports minus total exports (domestic plus foreign).<sup>2</sup> Less than 0.05 percent.<sup>3</sup> Preliminary.

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Production figures are estimates of the Crop Reporting Board, revised. See introductory text. Italic figures are census returns.

TABLE 61.—Oats: Acreage, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934

| State and division  | Acreage harvested |             |                   | Yield per acre   |         |                   | Production       |               |                   | Price for crop of— |                   |
|---------------------|-------------------|-------------|-------------------|------------------|---------|-------------------|------------------|---------------|-------------------|--------------------|-------------------|
|                     | Average, 1927-31  | 1933        | 1934 <sup>1</sup> | Average, 1927-31 | 1933    | 1934 <sup>1</sup> | Average, 1927-31 | 1933          | 1934 <sup>1</sup> | 1933               | 1934 <sup>1</sup> |
|                     | 1,000 acres       | 1,000 acres | 1,000 acres       | Bushels          | Bushels | Bushels           | 1,000 bushels    | 1,000 bushels | 1,000 bushels     | Cents              | Cents             |
| Maine.....          | 120               | 180         | 117               | 38.8             | 40.0    | 40.0              | 4,322            | 5,200         | 4,680             | 41                 | 51                |
| New Hampshire.....  | 7                 | 6           | 7                 | 39.1             | 38.0    | 39.0              | 285              | 228           | 273               | 56                 | 65                |
| Vermont.....        | 60                | 59          | 61                | 31.2             | 27.0    | 29.0              | 1,947            | 1,593         | 1,769             | 56                 | 65                |
| Massachusetts.....  | 5                 | 5           | 5                 | 32.2             | 30.0    | 32.0              | 157              | 150           | 160               | 56                 | 64                |
| Rhode Island.....   | 2                 | 2           | 2                 | 32.6             | 36.0    | 32.0              | 64               | 72            | 64                | 54                 | 64                |
| Connecticut.....    | 8                 | 9           | 10                | 29.2             | 25.0    | 30.0              | 235              | 225           | 300               | 54                 | 63                |
| New York.....       | 858               | 820         | 836               | 31.2             | 20.5    | 28.0              | 26,861           | 16,810        | 23,408            | 45                 | 56                |
| New Jersey.....     | 42                | 44          | 44                | 28.0             | 27.0    | 33.0              | 1,233            | 1,188         | 1,452             | 45                 | 53                |
| Pennsylvania.....   | 958               | 925         | 906               | 30.4             | 22.5    | 27.5              | 29,069           | 20,812        | 24,915            | 44                 | 53                |
| North Atlantic..... | 2,059             | 2,000       | 1,988             | 31.1             | 23.1    | 28.7              | 64,073           | 46,278        | 57,021            | 44.4               | 54.6              |
| Ohio.....           | 1,851             | 1,273       | 1,209             | 35.6             | 20.5    | 21.5              | 63,826           | 26,096        | 25,994            | 35                 | 48                |
| Indiana.....        | 2,001             | 1,690       | 1,350             | 29.5             | 17.0    | 13.5              | 61,328           | 28,730        | 18,225            | 32                 | 45                |
| Illinois.....       | 4,236             | 4,039       | 3,029             | 32.6             | 19.5    | 11.0              | 139,955          | 78,760        | 33,319            | 32                 | 46                |
| Michigan.....       | 1,424             | 1,121       | 1,222             | 32.2             | 21.0    | 23.5              | 45,707           | 23,541        | 28,717            | 38                 | 51                |
| Wisconsin.....      | 2,449             | 2,457       | 2,334             | 35.8             | 26.0    | 28.0              | 84,750           | 63,882        | 65,352            | 34                 | 48                |
| Minnesota.....      | 4,337             | 4,484       | 3,767             | 34.0             | 21.5    | 19.3              | 138,859          | 96,406        | 72,703            | 30                 | 48                |
| Iowa.....           | 6,151             | 6,243       | 4,900             | 35.8             | 23.0    | 12.5              | 214,018          | 143,589       | 61,260            | 29                 | 47                |
| Missouri.....       | 1,647             | 1,764       | 1,235             | 20.4             | 18.5    | 11.0              | 38,652           | 32,634        | 13,585            | 34                 | 48                |
| North Dakota.....   | 1,841             | 1,703       | 766               | 22.7             | 13.0    | 11.6              | 38,074           | 22,139        | 8,886             | 25                 | 48                |
| South Dakota.....   | 2,311             | 696         | 376               | 26.6             | 7.5     | 9.0               | 59,223           | 5,220         | 3,384             | 30                 | 51                |
| Nebraska.....       | 2,422             | 2,226       | 1,224             | 26.5             | 10.5    | 7.0               | 67,015           | 23,973        | 8,568             | 29                 | 49                |
| Kansas.....         | 1,325             | 1,528       | 1,238             | 22.4             | 17.0    | 13.0              | 32,929           | 25,376        | 16,064            | 33                 | 48                |
| North Central.....  | 31,996            | 29,224      | 22,650            | 31.1             | 19.5    | 15.7              | 982,336          | 570,346       | 356,077           | 31.3               | 47.8              |
| Delaware.....       | 3                 | 3           | 4                 | 28.6             | 29.0    | 33.0              | 88               | 87            | 132               | 48                 | 55                |
| Maryland.....       | 54                | 50          | 44                | 28.4             | 24.0    | 30.0              | 1,563            | 1,200         | 1,320             | 42                 | 54                |
| Virginia.....       | 150               | 168         | 123               | 20.0             | 20.0    | 19.5              | 3,189            | 3,390         | 2,398             | 45                 | 54                |
| West Virginia.....  | 144               | 120         | 108               | 23.6             | 19.0    | 19.0              | 3,352            | 2,280         | 2,052             | 46                 | 55                |
| North Carolina..... | 173               | 205         | 207               | 17.1             | 16.5    | 17.0              | 3,206            | 3,382         | 3,519             | 56                 | 64                |
| South Carolina..... | 355               | 370         | 338               | 21.9             | 19.5    | 17.0              | 8,117            | 7,215         | 6,596             | 63                 | 71                |
| Georgia.....        | 280               | 295         | 336               | 13.7             | 18.0    | 19.0              | 5,778            | 5,310         | 6,384             | 64                 | 70                |
| Florida.....        | 9                 | 7           | 8                 | 14.0             | 11.5    | 13.0              | 126              | 80            | 104               | 66                 | 76                |
| South Atlantic..... | 1,168             | 1,218       | 1,218             | 20.6             | 18.8    | 18.5              | 25,419           | 22,614        | 22,505            | 56.7               | 65.3              |
| Kentucky.....       | 178               | 122         | 110               | 17.6             | 16.0    | 15.0              | 3,187            | 1,652         | 1,650             | 44                 | 50                |
| Tennessee.....      | 108               | 109         | 89                | 16.7             | 16.0    | 15.0              | 1,778            | 1,744         | 1,335             | 46                 | 52                |
| Alabama.....        | 101               | 69          | 110               | 17.8             | 16.0    | 19.0              | 1,864            | 1,104         | 2,090             | 58                 | 69                |
| Mississippi.....    | 33                | 21          | 31                | 20.0             | 16.0    | 21.0              | 716              | 336           | 651               | 56                 | 67                |
| Arkansas.....       | 112               | 103         | 132               | 19.4             | 16.0    | 15.5              | 2,288            | 1,648         | 2,046             | 43                 | 62                |
| Louisiana.....      | 16                | 16          | 20                | 23.3             | 16.3    | 25.0              | 399              | 261           | 500               | 46                 | 63                |
| Oklahoma.....       | 1,119             | 1,161       | 1,300             | 21.0             | 18.5    | 15.5              | 25,684           | 21,478        | 20,150            | 34                 | 45                |
| Texas.....          | 1,448             | 1,189       | 1,546             | 25.4             | 17.5    | 21.0              | 37,046           | 20,808        | 32,466            | 36                 | 45                |
| South Central.....  | 3,114             | 2,790       | 3,338             | 22.5             | 17.7    | 18.2              | 72,963           | 49,831        | 60,888            | 36.7               | 47.1              |
| Montana.....        | 314               | 383         | 306               | 26.9             | 17.0    | 24.0              | 8,697            | 6,511         | 7,344             | 32                 | 46                |
| Idaho.....          | 128               | 142         | 132               | 33.2             | 32.0    | 34.0              | 4,346            | 4,644         | 4,488             | 29                 | 40                |
| Wyoming.....        | 134               | 151         | 83                | 25.8             | 21.0    | 21.0              | 3,899            | 3,171         | 1,743             | 33                 | 54                |
| Colorado.....       | 182               | 162         | 97                | 27.6             | 25.5    | 23.5              | 5,262            | 4,131         | 2,280             | 29                 | 52                |
| New Mexico.....     | 34                | 38          | 23                | 20.4             | 22.0    | 15.0              | 789              | 836           | 345               | 42                 | 61                |
| Arizona.....        | 10                | 13          | 12                | 27.1             | 29.0    | 24.0              | 299              | 377           | 288               | 44                 | 53                |
| Utah.....           | 46                | 50          | 32                | 35.2             | 31.0    | 26.0              | 1,691            | 1,550         | 832               | 32                 | 50                |
| Nevada.....         | 2                 | 3           | 2                 | 35.5             | 30.0    | 23.0              | 82               | 90            | 46                | 38                 | 54                |
| Washington.....     | 150               | 179         | 170               | 46.0             | 53.0    | 40.0              | 7,292            | 9,487         | 6,800             | 35                 | 46                |
| Oregon.....         | 245               | 259         | 245               | 30.2             | 38.0    | 24.0              | 8,116            | 9,842         | 5,904             | 34                 | 44                |
| California.....     | 88                | 89          | 98                | 25.2             | 23.5    | 23.0              | 2,192            | 2,092         | 2,264             | 38                 | 42                |
| Western.....        | 1,334             | 1,469       | 1,201             | 30.4             | 29.0    | 26.9              | 42,165           | 42,631        | 32,324            | 33.2               | 45.7              |
| United States.....  | 39,673            | 36,701      | 30,395            | 30.1             | 19.9    | 17.4              | 1,186,956        | 731,500       | 528,815           | 33.4               | 49.1              |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

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TABLE 62.—Oats: Production, world and selected countries, 1894-95 to 1934-35

| Crop year                  | Estimated world, excluding Russia and China | Estimated Europe, excluding Russia | Selected countries |                     |                 |                 |                 |                 |                   |                 |
|----------------------------|---|------------------------------------|--------------------|---------------------|-----------------|-----------------|-----------------|-----------------|-------------------|-----------------|
|                            |   |                                    | United States      | Russia <sup>1</sup> | Germany         | Canada          | France          | Poland          | England and Wales | Argentina       |
|                            | Million bushels                             | Million bushels                    | Million bushels    | Million bushels     | Million bushels | Million bushels | Million bushels | Million bushels | Million bushels   | Million bushels |
| 1894-95.....               | 2,339                                       | 1,453                              | 750                | 683                 | 453             | 294             | 294             | 119             | 119               | -----           |
| 1895-96.....               | 2,544                                       | 1,434                              | 925                | 717                 | 450             | 306             | 306             | 105             | 105               | -----           |
| 1896-97.....               | 2,317                                       | 1,378                              | 775                | 800                 | 411             | 296             | 296             | 93              | 93                | -----           |
| 1897-98.....               | 2,272                                       | 1,263                              | 830                | 664                 | 394             | 253             | 253             | 99              | 99                | 1               |
| 1898-99.....               | 2,502                                       | 1,513                              | 842                | 683                 | 465             | 322             | 322             | 102             | 102               | 1               |
| 1899-1900.....             | 2,646                                       | 1,464                              | 937                | 995                 | 474             | 308             | 308             | 99              | 99                | 2               |
| 1900-1901.....             | 2,656                                       | 1,454                              | 945                | 854                 | 489             | 285             | 285             | 99              | 99                | 2               |
| 1901-2.....                | 2,865                                       | 1,415                              | 800                | 624                 | 486             | 255             | 255             | 91              | 91                | 2               |
| 1902-3.....                | 2,912                                       | 1,576                              | 1,077              | 931                 | 514             | 320             | 320             | 115             | 115               | 4               |
| 1903-4.....                | 2,845                                       | 1,649                              | 885                | 800                 | 542             | 344             | 344             | 109             | 109               | 3               |
| 1904-5.....                | 2,713                                       | 1,430                              | 1,012              | 1,124               | 478             | 291             | 291             | 112             | 112               | 4               |
| 1905-6.....                | 2,832                                       | 1,455                              | 1,104              | 937                 | 451             | 306             | 306             | 99              | 99                | 6               |
| 1906-7.....                | 2,994                                       | 1,683                              | 1,023              | 714                 | 581             | 295             | 295             | 109             | 109               | 12              |
| 1907-8.....                | 2,852                                       | 1,763                              | 801                | 921                 | 630             | 353             | 353             | 121             | 121               | 34              |
| 1908-9.....                | 2,820                                       | 1,626                              | 829                | 959                 | 530             | 266             | 327             | 106             | 106               | 32              |
| 1909-10.....               | 3,385                                       | 1,865                              | 1,014              | 1,163               | 629             | 376             | 383             | 104             | 104               | 36              |
| 1910-11.....               | 3,162                                       | 1,662                              | 1,106              | 1,065               | 544             | 261             | 332             | 104             | 104               | 47              |
| 1911-12.....               | 3,123                                       | 1,685                              | 886                | 876                 | 531             | 389             | 349             | 96              | 96                | 69              |
| 1912-13.....               | 3,709                                       | 1,722                              | 1,353              | 1,089               | 537             | 416             | 355             | 89              | 76                | 73              |
| 1913-14.....               | 3,524                                       | 1,912                              | 1,039              | 1,251               | 669             | 430             | 357             | 91              | 43                | 43              |
| 1914-15.....               | 3,213                                       | 1,683                              | 1,066              | 915                 | 623             | 333             | 318             | 93              | 49                | 49              |
| 1915-16.....               | 3,511                                       | 1,403                              | 1,435              | 897                 | 412             | 494             | 239             | 101             | 75                | 75              |
| 1916-17.....               | 3,174                                       | 1,471                              | 1,139              | 845                 | 454             | 436             | 277             | 102             | 32                | 32              |
| 1917-18.....               | 3,094                                       | 1,049                              | 1,443              | 761                 | 250             | 428             | 220             | 106             | 69                | 69              |
| 1918-19.....               | 3,137                                       | 1,120                              | 1,430              | -----               | 302             | 453             | 181             | 141             | 34                | 34              |
| 1919-20.....               | 2,988                                       | 1,320                              | 1,107              | -----               | 310             | 419             | 180             | 76              | 110               | 31              |
| 1920-21.....               | 3,629                                       | 1,478                              | 1,444              | 486                 | 332             | 564             | 291             | 129             | 103               | 51              |
| 1921-22.....               | 3,074                                       | 1,455                              | 1,045              | 359                 | 345             | 453             | 244             | 92              | 100               | 31              |
| 1922-23.....               | 3,275                                       | 1,478                              | 1,148              | 537                 | 277             | 522             | 288             | 110             | 88                | 56              |
| 1923-24.....               | 3,714                                       | 1,722                              | 1,227              | 575                 | 421             | 599             | 337             | 153             | 95                | 76              |
| 1924-25.....               | 3,574                                       | 1,572                              | 1,424              | 613                 | 390             | 431             | 306             | 106             | 105               | 53              |
| 1925-26.....               | 3,712                                       | 1,709                              | 1,410              | 794                 | 385             | 427             | 328             | 144             | 97                | 80              |
| 1926-27.....               | 3,534                                       | 1,843                              | 1,142              | 1,022               | 436             | 407             | 364             | 134             | 104               | 66              |
| 1927-28.....               | 3,437                                       | 1,748                              | 1,093              | 903                 | 437             | 467             | 343             | 147             | 94                | 52              |
| 1928-29.....               | 3,829                                       | 1,879                              | 1,319              | 1,135               | 482             | 480             | 340             | 172             | 101               | 65              |
| 1929-30.....               | 3,647                                       | 2,060                              | 1,118              | 1,084               | 509             | 301             | 373             | 203             | 107               | 63              |
| 1930-31.....               | 3,594                                       | 1,714                              | 1,277              | 1,145               | 390             | 450             | 286             | 162             | 94                | 61              |
| 1931-32.....               | 3,324                                       | 1,695                              | 1,127              | 755                 | 427             | 349             | 316             | 159             | 87                | 73              |
| 1932-33.....               | 3,664                                       | 1,851                              | 1,247              | 774                 | 458             | 416             | 332             | 165             | 88                | 70              |
| 1933-34.....               | 3,143                                       | 1,938                              | 732                | 1,062               | 479             | 327             | 391             | 185             | 86                | 57              |
| 1934-35 <sup>4</sup> ..... | 2,680                                       | 1,641                              | 529                | -----               | 376             | 345             | 286             | 157             | 78                | 78              |

<sup>1</sup> Includes all Russian territory reporting for the years shown.

<sup>2</sup> Total Russian Empire, exclusive of the 10 Vistula Provinces of Russian Poland and the Province of Batum in Transcaucasia.

<sup>3</sup> Exclusive of Russian Poland, Lithuania, parts of present Latvia and the Ukraine, and the Provinces of Batum and Elizabetpol, in Transcaucasia.

<sup>4</sup> Beginning this year, estimates for the present territory of the Union of Soviet Socialist Republics, exclusive of Turkestan, Transcaucasia, and the Far East, which territory in 1924-25 produced 20,248,000 bushels.

<sup>5</sup> Beginning with this year post-war boundaries, and therefore not comparable with earlier years.

<sup>6</sup> Preliminary.

Bureau of Agricultural Economics; official sources and International Institute of Agriculture.

Production figures refer to the year of harvest. Harvests of the Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow; thus for 1934-35 the crop harvested in the Northern Hemisphere countries in 1934 is combined with the Southern Hemisphere harvest which begins late in 1934 and ends early in 1935.

TABLE 63.—Oats: Acreage, yield per acre, and production in specified countries, average 1921-22 to 1925-26, annual 1931-32 to 1934-35

| Country                | Acreage                                  |                |                |                |                | Yield per acre                           |              |              |              |               | Production                               |                  |                  |                  |                  |
|------------------------|--|----------------|----------------|----------------|----------------|--|--------------|--------------|--------------|---------------|--|------------------|------------------|------------------|------------------|
|                        | Aver-<br>age<br>1921-22<br>to<br>1925-26 | 1931-32        | 1932-33        | 1933-34        | 1934-<br>35 1  | Aver-<br>age<br>1921-22<br>to<br>1925-26 | 1931-<br>32  | 1932-<br>33  | 1933-<br>34  | 1934-<br>35 1 | Aver-<br>age<br>1921-22<br>to<br>1925-26 | 1931-32          | 1932-33          | 1933-34          | 1934-35 1        |
|                        | 1,000<br>acres                           | 1,000<br>acres | 1,000<br>acres | 1,000<br>acres | 1,000<br>acres | Bush-<br>els                             | Bush-<br>els | Bush-<br>els | Bush-<br>els | Bush-<br>els  | 1,000<br>bushels                         | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels |
| NORTHERN HEMISPHERE    |  |                |                |                |                |  |              |              |              |               |  |                  |                  |                  |                  |
| North America:         |  |                |                |                |                |  |              |              |              |               |  |                  |                  |                  |                  |
| Canada.....            | 14,585                                   | 12,871         | 13,143         | 13,629         | 13,781         | 33.4                                     | 27.1         | 31.6         | 24.1         | 25.1          | 486,870                                  | 436,786          | 434,034          | 326,085          | 345,042          |
| United States.....     | 42,441                                   | 40,084         | 41,420         | 36,701         | 30,306         | 23.5                                     | 28.1         | 30.1         | 16.9         | 17.4          | 1,261,023                                | 1,126,913        | 1,246,048        | 731,500          | 628,815          |
| Total.....             | 57,026                                   | 52,955         | 54,563         | 50,330         | 44,126         | 30.5                                     | 27.9         | 30.5         | 21.1         | 19.8          | 1,737,563                                | 1,476,708        | 1,602,832        | 1,068,105        | 873,857          |
| Europe:                |  |                |                |                |                |  |              |              |              |               |  |                  |                  |                  |                  |
| England and Wales..... | 2,039                                    | 1,652          | 1,580          | 1,404          | 1,402          | 47.5                                     | 52.5         | 55.4         | 57.4         | 55.1          | 96,708                                   | 86,751           | 87,563           | 85,820           | 78,120           |
| Scotland.....          | 770                                      | 835            | 867            | 856            | 820            | 40.0                                     | 52.1         | 60.2         | 68.8         | 68.7          | 43,540                                   | 43,540           | 42,220           | 43,580           | 45,150           |
| Irish Free State.....  | 730                                      | 623            | 632            | 638            | 580            | 49.3                                     | 55.3         | 69.5         | 68.9         | 69.6          | 37,310                                   | 36,457           | 36,201           | 43,693           | 34,660           |
| Northern Ireland.....  | 344                                      | 250            | 246            | 242            | 226            | 54.0                                     | 55.3         | 70.6         | 63.9         | 63.6          | 18,552                                   | 18,201           | 18,411           | 19,185           | 19,167           |
| Norway.....            | 274                                      | 237            | 235            | 242            | 226            | 41.6                                     | 40.1         | 50.7         | 47.3         | 53.8          | 11,400                                   | 9,484            | 9,528            | 12,416           | 12,167           |
| Sweden.....            | 1,285                                    | 1,179          | 1,141          | 1,004          | 943            | 41.7                                     | 42.9         | 51.9         | 51.8         | 51.8          | 75,374                                   | 68,037           | 81,845           | 87,301           | 81,864           |
| Denmark.....           | 1,058                                    | 984            | 984            | 943            | 943            | 64.2                                     | 63.8         | 73.9         | 67.5         | 71.6          | 60,542                                   | 64,438           | 72,707           | 66,565           | 67,616           |
| Netherlands.....       | 380                                      | 360            | 350            | 337            | 321            | 54.0                                     | 63.4         | 64.6         | 59.4         | 56.4          | 20,860                                   | 19,784           | 19,707           | 20,004           | 18,119           |
| Netherlands.....       | 380                                      | 360            | 350            | 337            | 321            | 54.0                                     | 63.4         | 64.6         | 59.4         | 56.4          | 20,860                                   | 19,784           | 19,707           | 20,004           | 18,119           |
| Belgium.....           | 656                                      | 702            | 712            | 733            | 735            | 62.4                                     | 66.3         | 73.6         | 73.1         | 64.1          | 40,964                                   | 48,384           | 52,388           | 37,216           | 47,135           |
| Luxembourg.....        | 70                                       | 75             | 60             | 68             | 68             | 30.4                                     | 36.9         | 39.7         | 46.2         | 47.2          | 2,130                                    | 3,721            | 3,782            | 3,209            | 3,209            |
| France.....            | 8,921                                    | 8,593          | 8,370          | 8,314          | 8,127          | 28.3                                     | 31.0         | 29.7         | 21.6         | 27.7          | 300,560                                  | 316,268          | 331,630          | 300,550          | 286,237          |
| Spain.....             | 1,623                                    | 1,086          | 1,026          | 1,803          | 1,877          | 22.8                                     | 21.0         | 20.7         | 21.6         | 27.7          | 36,175                                   | 67,913           | 67,913           | 67,913           | 61,969           |
| Portugal.....          | 1,180                                    | 1,146          | 1,103          | 1,107          | 1,063          | 11.1                                     | 15.0         | 13.8         | 8.8          | 8.8           | 6,422                                    | 6,331            | 6,343            | 6,569            | 51,969           |
| Italy.....             | 1,51                                     | 41             | 41             | 40             | 26             | 54.7                                     | 61.3         | 69.1         | 63.6         | 56.2          | 2,788                                    | 30,467           | 41,538           | 39,559           | 31,404           |
| Switzerland.....       | 8,246                                    | 8,310          | 8,116          | 7,864          | 7,772          | 31.0                                     | 34.4         | 37.9         | 35.7         | 35.7          | 37,896                                   | 39,467           | 41,538           | 39,559           | 31,404           |
| Germany.....           | 2,039                                    | 2,031          | 2,020          | 1,976          | 1,936          | 44.1                                     | 51.4         | 56.5         | 60.9         | 48.3          | 2,788                                    | 2,808            | 2,420            | 2,420            | 2,420            |
| Austria.....           | 745                                      | 777            | 769            | 755            | 743            | 44.1                                     | 51.4         | 56.5         | 60.9         | 48.3          | 303,278                                  | 427,470          | 458,160          | 470,011          | 371,481          |
| Czechoslovakia.....    | 2,039                                    | 2,031          | 2,020          | 1,976          | 1,936          | 40.2                                     | 41.5         | 53.7         | 55.0         | 42.0          | 92,817                                   | 92,817           | 92,817           | 92,817           | 92,817           |
| Hungary.....           | 785                                      | 596            | 578            | 570            | 567            | 28.8                                     | 22.4         | 37.6         | 43.2         | 26.8          | 82,029                                   | 84,368           | 114,022          | 108,954          | 81,224           |
| Yugoslavia.....        | 923                                      | 930            | 930            | 886            | 916            | 22.4                                     | 16.6         | 22.9         | 27.3         | 26.1          | 20,644                                   | 22,644           | 21,750           | 24,837           | 15,217           |
| Greece.....            | 206                                      | 344            | 332            | 341            | 351            | 20.3                                     | 15.3         | 20.6         | 27.1         | 24.6          | 20,644                                   | 18,242           | 18,548           | 23,563           | 22,072           |
| Bulgaria.....          | 362                                      | 293            | 288            | 327            | 312            | 20.3                                     | 15.3         | 20.6         | 27.1         | 24.6          | 4,187                                    | 5,274            | 6,842            | 9,257            | 8,032            |
| Rumania.....           | 3,133                                    | 2,163          | 1,956          | 2,060          | 2,039          | 19.9                                     | 21.4         | 22.6         | 27.1         | 19.9          | 7,100                                    | 7,060            | 6,920            | 8,948            | 5,032            |
| Poland.....            | 4,446                                    | 5,367          | 5,487          | 5,447          | 5,463          | 27.2                                     | 31.1         | 28.6         | 30.0         | 23.9          | 62,819                                   | 46,175           | 44,276           | 55,558           | 40,637           |
| Lithuania.....         | 842                                      | 910            | 922            | 848            | 812            | 20.1                                     | 21.4         | 22.6         | 30.0         | 23.9          | 120,813                                  | 164,713          | 184,838          | 156,717          | 156,717          |
| Latvia.....            | 740                                      | 795            | 802            | 758            | 743            | 20.1                                     | 21.4         | 22.6         | 30.0         | 23.9          | 23,078                                   | 23,265           | 24,552           | 22,776           | 25,105           |
| Estonia.....           | 367                                      | 356            | 343            | 343            | 341            | 24.6                                     | 29.7         | 27.7         | 26.9         | 30.9          | 18,205                                   | 23,611           | 22,552           | 22,783           | 24,305           |
| Finland.....           | 1,058                                    | 1,119          | 1,124          | 1,130          | 1,132          | 32.6                                     | 41.2         | 41.0         | 38.7         | 46.6          | 9,505                                    | 11,268           | 8,066            | 8,014            | 53,089           |

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| U.S.S.R., European and Asiatic  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Total Europe reporting area and production, all years                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Estimated European total, excluding U.S.S.R.  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Africa:   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Morocco   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Algeria   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Tunisia   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Total   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Asia:   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Turkey  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Syria and Lebanon   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Japan   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Ochsen  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Total Northern Hemisphere reporting area and production, all years                        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Estimated Northern Hemisphere total, excluding U.S.S.R. and China                         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SOUTHERN HEMISPHERE   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Chile   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Uruguay   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Argentina   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Union of South Africa   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Australia   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| New Zealand   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Total Northern and Southern Hemisphere countries reporting area and production, all years |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Estimated world total, excluding U.S.S.R. and China                                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

1 Preliminary.  
 2 4-year average.  
 3 2-year average.  
 4 1 year only.

Bureau of Agricultural Economics; official sources and International Institute of Agriculture. "U.S.S.R." means Union of Soviet Socialist Republics. Both acreage and production figures refer to the year of harvest. Harvests of the Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow; thus for 1934-35 the crop harvested in the Northern Hemisphere countries in 1934 is combined with the Southern Hemisphere harvest which begins late in 1934 and ends early in 1935.



TABLE 64.—Oats: Stocks on farms, quarterly, United States, 1925-26 to 1934-35

| Season  | Stocks on farms |               |               |                     | Season  | Stocks on farms |               |               |                     |
|---------|-----------------|---------------|---------------|---------------------|---------|-----------------|---------------|---------------|---------------------|
|         | Oct. 1          | Jan. 1        | Apr. 1        | July 1 <sup>1</sup> |         | Oct. 1          | Jan. 1        | Apr. 1        | July 1 <sup>1</sup> |
|         | 1,000 bushels   | 1,000 bushels | 1,000 bushels | 1,000 bushels       |         | 1,000 bushels   | 1,000 bushels | 1,000 bushels | 1,000 bushels       |
| 1925-26 | -----           | -----         | 519,971       | 229,145             | 1930-31 | 981,352         | 746,977       | 429,885       | 168,554             |
| 1926-27 | 836,480         | 680,422       | 398,348       | 150,723             | 1931-32 | 886,863         | 655,804       | 365,794       | 142,683             |
| 1927-28 | 830,864         | 628,045       | 332,957       | 111,841             | 1932-33 | 973,979         | 703,195       | 467,976       | 204,372             |
| 1928-29 | 1,021,209       | 786,567       | 447,773       | 177,681             | 1933-34 | 608,005         | 456,283       | 275,425       | 107,577             |
| 1929-30 | 854,576         | 644,029       | 368,338       | 144,116             | 1934-35 | 446,287         | 346,288       | 208,185       | -----               |

<sup>1</sup> Includes old crop only.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 65.—Oats: Monthly marketings by farmers, as reported by about 3,500 mills and elevators, United States, 1924-25 to 1933-34

Percentage of receipts during—

| Season  | June    | July    | Aug.    | Sept.   | Oct.    | Nov.    | Dec.    | Jan.    | Feb.    | Mar.    | Apr.    | May     | June    | Season  |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|         | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| 1924-25 | 0.2     | 6.8     | 18.3    | 18.3    | 12.6    | 7.7     | 8.3     | 7.7     | 4.8     | 3.3     | 2.7     | 4.9     | 4.4     | 100.0   |
| 1925-26 | .2      | 9.6     | 20.0    | 13.5    | 10.9    | 7.4     | 7.0     | 6.0     | 6.2     | 5.3     | 4.3     | 4.6     | 5.0     | 100.0   |
| 1926-27 | 1.3     | 11.4    | 20.4    | 12.4    | 9.1     | 6.5     | 6.7     | 6.6     | 6.2     | 5.9     | 4.4     | 5.0     | 4.1     | 100.0   |
| 1927-28 | 1.4     | 8.4     | 21.7    | 14.5    | 10.3    | 6.6     | 6.6     | 6.3     | 6.5     | 6.0     | 3.9     | 4.4     | 3.4     | 100.0   |
| 1928-29 | 1.1     | 6.8     | 23.7    | 13.5    | 10.2    | 6.5     | 7.5     | 5.4     | 6.6     | 5.0     | 4.8     | 4.1     | 4.8     | 100.0   |
| 1929-30 | 1.0     | 11.3    | 30.2    | 12.8    | 8.7     | 5.4     | 5.1     | 4.2     | 4.4     | 4.4     | 4.8     | 4.3     | 3.4     | 100.0   |
| 1930-31 | 1.4     | 12.6    | 27.5    | 13.2    | 8.7     | 4.4     | 5.0     | 4.4     | 5.5     | 4.5     | 5.0     | 3.8     | 4.0     | 100.0   |
| 1931-32 | 3.3     | 15.2    | 21.5    | 11.3    | 7.5     | 5.6     | 5.6     | 5.6     | 5.5     | 5.2     | 5.3     | 4.9     | 3.5     | 100.0   |
| 1932-33 | 13.4    | 22.4    | 11.5    | 7.4     | 5.1     | 5.1     | 4.2     | 4.2     | 3.9     | 5.8     | 7.5     | 9.4     | .1      | 100.0   |
| 1933-34 | 2.9     | 22.4    | 21.0    | 14.0    | 6.9     | 5.4     | 4.6     | 3.9     | 3.8     | 4.1     | 3.5     | 4.0     | 3.5     | 100.0   |

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TABLE 66.—Oats: Receipts graded by licensed inspectors, all inspection points, total of all classes under each grade, 1924-25 to 1933-34

| Year beginning August | Grade  |        |         |        |        | Total   |
|-----------------------|--------|--------|---------|--------|--------|---------|
|                       | No. 1  | No. 2  | No. 3   | No. 4  | Sample |         |
|                       | Cars   | Cars   | Cars    | Cars   | Cars   | Cars    |
| 1924-25               | 1,439  | 33,631 | 110,377 | 24,580 | 14,853 | 184,930 |
| 1925-26               | 2,197  | 53,587 | 75,634  | 17,989 | 6,260  | 155,667 |
| 1926-27               | 1,465  | 19,692 | 49,581  | 28,548 | 17,695 | 116,981 |
| 1927-28               | 2,838  | 29,106 | 64,444  | 19,397 | 5,728  | 121,513 |
| 1928-29               | 4,408  | 14,144 | 77,823  | 20,684 | 9,305  | 126,364 |
| 1929-30               | 4,106  | 26,053 | 71,757  | 11,822 | 3,097  | 116,835 |
| 1930-31               | 10,344 | 36,939 | 35,186  | 8,137  | 983    | 91,589  |
| 1931-32               | 1,394  | 21,966 | 40,303  | 4,059  | 926    | 68,648  |
| 1932-33               | 1,370  | 24,110 | 49,901  | 7,936  | 1,213  | 84,530  |
| 1933-34               | 2,926  | 15,547 | 27,050  | 6,638  | 1,703  | 53,864  |

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TABLE 67.—Oats: Commercial stocks, 1926-27 to 1934-35

DOMESTIC OATS IN UNITED STATES<sup>1</sup>

| Year         | July          | Aug.          | Sept.         | Oct.          | Nov.          | Dec.          | Jan.          | Feb.          | Mar.          | Apr.          | May           | June          |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|              | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels |
| 1926-27----- |               |               |               |               |               |               | 47,123        | 47,421        | 45,105        | 38,481        | 30,513        | 21,032        |
| 1927-28----- | 17,688        | 11,886        | 23,224        | 26,513        | 25,682        | 24,784        | 23,815        | 21,949        | 21,127        | 16,808        | 11,667        | 7,171         |
| 1928-29----- | 8,338         | 2,445         | 15,992        | 17,561        | 16,900        | 15,399        | 17,314        | 16,219        | 16,801        | 14,003        | 11,493        | 10,591        |
| 1929-30----- | 8,592         | 8,668         | 24,318        | 28,597        | 32,762        | 30,064        | 29,019        | 26,097        | 22,937        | 19,484        | 16,519        | 13,247        |
| 1930-31----- | 11,028        | 9,102         | 25,844        | 32,928        | 33,263        | 30,504        | 30,896        | 26,770        | 23,029        | 18,213        | 13,930        | 9,681         |
| 1931-32----- | 7,525         | 8,021         | 15,013        | 17,372        | 18,180        | 18,161        | 16,810        | 17,096        | 17,988        | 15,796        | 13,621        | 11,839        |
| 1932-33----- | 10,657        | 12,627        | 27,273        | 28,595        | 29,084        | 27,484        | 26,443        | 26,406        | 25,831        | 24,195        | 21,873        | 23,959        |
| 1933-34----- | 28,430        | 35,589        | 46,193        | 50,546        | 49,860        | 48,755        | 47,229        | 45,177        | 42,399        | 38,190        | 33,013        | 26,237        |
| 1934-35----- | 23,369        | 22,732        | 26,344        | 26,271        | 24,245        | 23,570        |               |               |               |               |               |               |

UNITED STATES OATS IN CANADA<sup>2</sup>

| Year         | July          | Aug.          | Sept.         | Oct.          | Nov.          | Dec.          | Jan.          | Feb.          | Mar.          | Apr.          | May           | June          |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|              | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels |
| 1926-27----- |               |               |               |               |               |               | 352           | 247           | 218           | 164           | 635           | 1,432         |
| 1927-28----- | 1,759         | 1,253         | 1,288         | 1,435         | 1,110         | 825           | 670           | 563           | 438           | 216           | 57            | 239           |
| 1928-29----- | 60            | 4             | 978           | 2,326         | 1,031         | 547           | 644           | 494           | 424           | 309           | 716           | 529           |
| 1929-30----- | 346           | 334           | 2,177         | 4,293         | 4,435         | 4,410         | 3,630         | 3,236         | 2,852         | 2,407         | 1,934         | 1,580         |
| 1930-31----- | 936           | 1,106         | 2,679         | 2,478         | 2,425         | 2,103         | 1,475         | 1,110         | 834           | 626           | 821           | 936           |
| 1931-32----- | 484           | 207           | 110           | 199           | 230           | 467           | 165           | 11            | 2             | 0             | 73            | 226           |
| 1932-33----- | 126           | 144           | 1,317         | 1,530         | 1,407         | 1,151         | 1,094         | 680           | 392           | 158           | 316           | 656           |
| 1933-34----- | 677           | 661           | 918           | 969           | 845           | 1,133         | 871           | 488           | 238           | 81            | 46            | 290           |
| 1934-35----- | 288           | 241           | 169           | 139           | 153           | 126           |               |               |               |               |               |               |

CANADIAN OATS IN CANADA<sup>3</sup>

| Year         | July          | Aug.          | Sept.         | Oct.          | Nov.          | Dec.          | Jan.          | Feb.          | Mar.          | Apr.          | May           | June          |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|              | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels |
| 1926-27----- |               |               |               |               |               |               | 14,868        | 14,846        | 15,026        | 13,835        | 10,732        | 7,734         |
| 1927-28----- | 5,843         | 4,438         | 2,685         | 2,505         | 4,923         | 8,634         | 10,656        | 11,879        | 13,027        | 12,918        | 12,070        | 9,270         |
| 1928-29----- | 8,247         | 5,381         | 3,114         | 3,847         | 9,636         | 15,145        | 20,665        | 21,085        | 22,709        | 24,079        | 19,753        | 17,892        |
| 1929-30----- | 16,045        | 15,893        | 14,859        | 16,449        | 19,777        | 20,998        | 21,233        | 20,109        | 18,489        | 16,065        | 12,553        | 10,340        |
| 1930-31----- | 8,753         | 6,689         | 5,974         | 9,594         | 11,178        | 13,839        | 15,052        | 14,200        | 13,799        | 14,877        | 11,873        | 10,601        |
| 1931-32----- | 9,074         | 8,874         | 8,806         | 9,527         | 10,823        | 13,577        | 15,582        | 14,624        | 14,277        | 14,800        | 11,054        | 6,005         |
| 1932-33----- | 5,659         | 6,272         | 5,694         | 7,031         | 8,314         | 9,115         | 9,262         | 9,389         | 9,767         | 11,864        | 11,023        | 9,692         |
| 1933-34----- | 10,252        | 12,204        | 13,501        | 15,893        | 19,328        | 20,192        | 20,144        | 18,753        | 18,222        | 16,747        | 12,676        | 10,682        |
| 1934-35----- | 10,263        | 10,463        | 9,374         | 11,987        | 15,775        | 15,786        |               |               |               |               |               |               |

CANADIAN OATS IN UNITED STATES<sup>4</sup>

| Year         | July          | Aug.          | Sept.         | Oct.          | Nov.          | Dec.          | Jan.          | Feb.          | Mar.          | Apr.          | May           | June          |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|              | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels |
| 1926-27----- |               |               |               |               |               |               | 228           | 228           | 171           | 66            | 117           | 208           |
| 1927-28----- | 19            | 24            | 26            | 0             | 139           | 296           | 609           | 346           | 247           | 117           | 21            | 199           |
| 1928-29----- | 122           | 12            | 123           | 141           | 211           | 711           | 900           | 704           | 801           | 516           | 722           | 577           |
| 1929-30----- | 377           | 341           | 341           | 283           | 429           | 670           | 699           | 634           | 615           | 488           | 330           | 264           |
| 1930-31----- | 91            | 146           | 21            | 49            | 27            | 7             | 255           | 167           | 3             | 10            | 78            | 238           |
| 1931-32----- | 55            | 13            | 41            | 41            | 32            | 32            | 2             | 2             | 2             | 1             | 1             | 40            |
| 1932-33----- | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| 1933-34----- | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| 1934-35----- | 0             | 0             | 0             | 0             | 266           | 23            |               |               |               |               |               |               |

<sup>1</sup> Includes domestic oats in store in public and private elevators in 41 markets and oats afloat in vessels or barges in harbors of lake and seaboard ports. Does not include oats in transit either by rail or water, stocks in mills, or mill elevators attached to mills, or private stocks of oats intended for local use.

<sup>2</sup> Includes United States oats in store at 15 Canadian points or afloat in vessels or barges in the harbors of lake and seaboard ports. Does not include oats in transit to Canadian ports.

<sup>3</sup> Includes practically all Canadian oats held within Canadian boundaries, exclusive of farm and certain mill stocks.

<sup>4</sup> Includes Canadian oats in store and afloat at 10 United States lake and seaboard ports but not Canadian oats in transit on lakes or canals.

Bureau of Agricultural Economics; compiled from weekly reports to the grain, hay, and feed market news service.

Data for domestic and Canadian oats in United States are for stocks on the Saturday nearest the 1st day of the month; for Canadian and United States oats in Canada data are for stocks on the Friday nearest the 1st day of the month.

TABLE 68.—Oats: Supply and distribution in continental United States, 1926-27 to 1934-35

| Year beginning July | Supply        |                         |                     |  |                      |                      | Distribution             |               |                     |
|---------------------|---------------|-------------------------|---------------------|--|----------------------|----------------------|--------------------------|---------------|---------------------|
|                     | Production    | Stocks on farms, July 1 | Farm supply, July 1 | Commercial stocks, July 1 <sup>1</sup> | Total stocks, July 1 | Total supply, July 1 | Net exports <sup>2</sup> | Disappearance | Stocks, end of year |
|                     | 1,000 bushels | 1,000 bushels           | 1,000 bushels       | 1,000 bushels                          | 1,000 bushels        | 1,000 bushels        | 1,000 bushels            | 1,000 bushels | 1,000 bushels       |
| 1926-27             | 1,141,941     | 229,145                 | 1,371,086           | 38,768                                 | 267,913              | 1,409,854            | 14,988                   | 1,226,452     | 168,414             |
| 1927-28             | 1,093,097     | 150,728                 | 1,243,825           | 17,686                                 | 168,414              | 1,261,511            | 9,611                    | 1,136,721     | 115,179             |
| 1928-29             | 1,318,977     | 111,841                 | 1,430,818           | 3,338                                  | 115,179              | 1,434,156            | 15,325                   | 1,232,058     | 186,273             |
| 1929-30             | 1,118,414     | 177,681                 | 1,296,095           | 8,592                                  | 186,273              | 1,304,687            | 7,680                    | 1,141,863     | 155,144             |
| 1930-31             | 1,277,379     | 144,116                 | 1,421,495           | 11,028                                 | 155,144              | 1,432,523            | 2,464                    | 1,253,980     | 176,079             |
| 1931-32             | 1,126,913     | 168,554                 | 1,295,467           | 7,525                                  | 176,079              | 1,302,992            | 4,352                    | 1,145,300     | 153,340             |
| 1932-33             | 1,246,548     | 142,683                 | 1,389,231           | 10,657                                 | 153,340              | 1,399,888            | 5,333                    | 1,161,753     | 232,802             |
| 1933-34             | 731,500       | 204,372                 | 935,872             | 28,430                                 | 232,802              | 964,302              | 1,251                    | 832,105       | 130,946             |
| 1934-35             | 528,815       | 107,577                 | 636,392             | 23,369                                 | 130,946              | 659,761              | -----                    | -----         | -----               |

<sup>1</sup> For July 1926, Bradstreet's visible supply.<sup>2</sup> Includes oatmeal.

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TABLE 69.—Oats: Average price per bushel received by producers, United States, 1925-26 to 1934-35

| Year    | July 15 | Aug. 15 | Sept. 15 | Oct. 15 | Nov. 15 | Dec. 15 | Jan. 15 | Feb. 15 | Mar. 15 | Apr. 15 | May 15 | June 15 | Weighted average |
|---------|---------|---------|----------|---------|---------|---------|---------|---------|---------|---------|--------|---------|------------------|
|         | Cents   | Cents   | Cents    | Cents   | Cents   | Cents   | Cents   | Cents   | Cents   | Cents   | Cents  | Cents   | Cents            |
| 1925-26 | 45.3    | 40.7    | 38.1     | 37.2    | 37.6    | 39.1    | 40.0    | 39.2    | 38.8    | 39.4    | 39.5   | 38.9    | 38.8             |
| 1926-27 | 37.7    | 37.9    | 35.6     | 39.0    | 39.8    | 41.1    | 42.6    | 43.4    | 43.4    | 43.2    | 45.4   | 48.0    | 40.1             |
| 1927-28 | 46.3    | 44.4    | 43.9     | 44.6    | 45.1    | 48.1    | 49.3    | 51.3    | 54.5    | 56.9    | 62.0   | 61.4    | 47.1             |
| 1928-29 | 56.2    | 38.4    | 36.7     | 39.0    | 39.8    | 42.5    | 43.7    | 47.0    | 46.6    | 45.8    | 44.6   | 42.5    | 40.7             |
| 1929-30 | 42.9    | 42.7    | 44.1     | 44.8    | 43.1    | 43.6    | 43.1    | 43.0    | 41.4    | 42.4    | 40.9   | 39.3    | 41.9             |
| 1930-31 | 33.1    | 35.7    | 36.1     | 34.7    | 31.5    | 32.3    | 31.1    | 30.7    | 30.1    | 30.2    | 28.6   | 26.1    | 32.2             |
| 1931-32 | 23.3    | 19.8    | 20.0     | 20.1    | 23.2    | 23.0    | 22.7    | 22.8    | 22.8    | 22.8    | 21.8   | 19.8    | 21.3             |
| 1932-33 | 17.5    | 14.8    | 14.4     | 13.1    | 13.1    | 13.0    | 13.4    | 13.3    | 13.7    | 17.0    | 21.7   | 23.1    | 15.7             |
| 1933-34 | 39.1    | 32.2    | 32.3     | 27.9    | 31.4    | 31.4    | 32.5    | 34.1    | 33.9    | 32.6    | 32.7   | 38.9    | 33.4             |
| 1934-35 | 40.6    | 45.8    | 50.3     | 50.5    | 51.1    | 53.9    | -----   | -----   | -----   | -----   | -----  | -----   | 49.1             |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 Yearbook, table 77. Only monthly prices are comparable.

TABLE 70.—Oats, No. 3, white: Weighted average price per bushel of reported cash sales, Chicago, 1925-26 to 1934-35

| Year    | Aug.  | Sept. | Oct.  | Nov.  | Dec.  | Jan.  | Feb.  | Mar.  | Apr.  | May   | June  | July  | Weighted average |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------------|
|         | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents            |
| 1925-26 | 41    | 39    | 39    | 40    | 42    | 42    | 41    | 40    | 42    | 41    | 40    | 42    | 41               |
| 1926-27 | 38    | 38    | 44    | 42    | 46    | 46    | 43    | 44    | 45    | 50    | 49    | 45    | 43               |
| 1927-28 | 47    | 47    | 48    | 49    | 54    | 55    | 56    | 59    | 63    | 67    | 68    | 56    | 55               |
| 1928-29 | 38    | 41    | 42    | 44    | 56    | 50    | 50    | 48    | 48    | 45    | 45    | 47    | 44               |
| 1929-30 | 43    | 48    | 47    | 45    | 45    | 45    | 44    | 43    | 43    | 41    | 38    | 35    | 44               |
| 1930-31 | 39    | 38    | 36    | 33    | 34    | 32    | 32    | 31    | 30    | 28    | 27    | 23    | 35               |
| 1931-32 | 21    | 22    | 23    | 26    | 25    | 25    | 24    | 22    | 23    | 23    | 21    | 18    | 22               |
| 1932-33 | 17    | 17    | 15    | 15    | 15    | 15    | 15    | 17    | 22    | 25    | 30    | 39    | 22               |
| 1933-34 | 36    | 35    | 32    | 34    | 35    | 37    | 36    | 33    | 32    | 35    | 43    | 45    | 36               |
| 1934-35 | 49    | 55    | 52    | 54    | 56    | ----- | ----- | ----- | ----- | ----- | ----- | ----- | -----            |

Bureau of Agricultural Economics; computed by weighting selling price by number of car lots sold as reported in Chicago Daily Trade Bulletin.

Data for 1899-1923 available in 1924 Yearbook, table 94; for 1924 in 1934 Yearbook, table 69.

TABLE 71.—Oats, including oatmeal, in terms of grain: International trade, average 1925-26 to 1929-30, annual 1930-31 to 1933-34

| Country  | Year beginning July           |                          |                          |                          |                          |                          |                          |                          |                          |                          |
|--|-------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|  | Average 1925-26<br>to 1929-30 |                          | 1930-31                  |                          | 1931-32                  |                          | 1932-33                  |                          | 1933-34 <sup>1</sup>     |                          |
|  | Ex-<br>ports                  | Im-<br>ports             | Ex-<br>ports             | Im-<br>ports             | Ex-<br>ports             | Im-<br>ports             | Ex-<br>ports             | Im-<br>ports             | Ex-<br>ports             | Im-<br>ports             |
| <b>PRINCIPAL EXPORT-<br/>ING COUNTRIES</b>       | <i>1,000<br/>bushels</i>      | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> |
| Argentina.....                                   | 29,280                        | <sup>2</sup> 91          | 45,036                   | 123                      | 52,195                   | 73                       | 33,892                   | 75                       | 20,970                   | -----                    |
| Germany.....                                     | 20,070                        | 15,581                   | 1,752                    | 2,751                    | 30                       | 1,115                    | 635                      | 1,275                    | 6,127                    | 360                      |
| United States.....                               | 17,754                        | 207                      | 3,123                    | 638                      | 4,437                    | 65                       | 5,361                    | 15                       | 1,406                    | <sup>3</sup> 143         |
| Canada.....                                      | 16,656                        | 2,899                    | 10,336                   | 714                      | 18,467                   | 1,817                    | 14,158                   | 2,144                    | 8,336                    | 21                       |
| Chile.....                                       | 3,861                         | -----                    | 6,512                    | -----                    | 1,055                    | -----                    | 682                      | -----                    | 4,031                    | -----                    |
| Czechoslovakia.....                              | 3,676                         | 1,260                    | 2,408                    | 69                       | 2,435                    | 564                      | 9,455                    | 2                        | 2,675                    | 2                        |
| Irish Free State.....                            | 3,305                         | 1,559                    | 847                      | 2,421                    | 230                      | 2,410                    | 145                      | 794                      | 88                       | -----                    |
| Rumania.....                                     | 3,302                         | 2                        | 6,335                    | 0                        | 824                      | 0                        | <sup>4</sup> 2,087       | <sup>4</sup> 0           | <sup>4</sup> 1,619       | <sup>4</sup> 0           |
| Poland.....                                      | 2,713                         | 1,499                    | 858                      | 55                       | 183                      | 39                       | 863                      | 30                       | 947                      | 0                        |
| Union of Soviet<br>Socialist Repub-<br>lics..... | 2,517                         | 0                        | 33,773                   | 0                        | 14,619                   | 0                        | 1,670                    | 0                        | 8,674                    | 0                        |
| Hungary.....                                     | 2,134                         | 2                        | 73                       | 363                      | 17                       | 85                       | 1,252                    | 0                        | 2,579                    | 0                        |
| Algeria.....                                     | 1,764                         | 588                      | 4,819                    | 422                      | 923                      | 1,253                    | 409                      | 200                      | 177                      | 874                      |
| Tunis.....                                       | 1,556                         | 81                       | 1,901                    | 24                       | 655                      | 0                        | 483                      | 1                        | 146                      | 68                       |
| Yugoslavia.....                                  | 495                           | <sup>2</sup> 45          | 96                       | 380                      | 4                        | 43                       | 2                        | 2                        | 104                      | 0                        |
| <b>Total.....</b>                                | <b>109,083</b>                | <b>23,817</b>            | <b>117,779</b>           | <b>7,960</b>             | <b>96,074</b>            | <b>7,464</b>             | <b>71,074</b>            | <b>4,538</b>             | <b>57,879</b>            | <b>1,466</b>             |
| <b>PRINCIPAL IMPORT-<br/>ING COUNTRIES</b>       |                               |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| United Kingdom.....                              | 1,170                         | 30,339                   | 1,237                    | 35,576                   | 666                      | 33,309                   | 348                      | 23,730                   | 56                       | 21,131                   |
| Switzerland.....                                 | 5                             | 10,936                   | 13                       | 14,253                   | 15                       | 15,645                   | 10                       | 15,642                   | 10                       | 14,827                   |
| Belgium.....                                     | 46                            | 8,210                    | 49                       | 10,794                   | 104                      | 5,601                    | 55                       | 3,306                    | 4                        | 1,384                    |
| Netherlands.....                                 | 412                           | 7,851                    | 1,173                    | 10,659                   | 160                      | 8,184                    | 82                       | 8,251                    | 59                       | 3,786                    |
| Italy.....                                       | 9                             | 7,016                    | 1                        | 12,001                   | 1                        | 11,506                   | 0                        | 9,551                    | 1                        | 7,781                    |
| France.....                                      | 648                           | 6,598                    | 73                       | 6,509                    | 24                       | 9,050                    | 15                       | 4,979                    | 556                      | 843                      |
| Austria.....                                     | 8                             | 6,092                    | 13                       | 6,589                    | 2                        | 4,984                    | 4                        | 2,131                    | 3                        | 1,288                    |
| Denmark.....                                     | 217                           | 3,255                    | 65                       | 4,550                    | 237                      | 2,166                    | 232                      | 1,243                    | 133                      | 1,636                    |
| Sweden.....                                      | 902                           | 2,856                    | 452                      | 3,779                    | 770                      | 3,946                    | 372                      | 1,972                    | 79                       | 2,886                    |
| Finland.....                                     | 25                            | 1,891                    | 24                       | 963                      | 62                       | 674                      | 8                        | 401                      | 27                       | 1,783                    |
| Cuba.....  | 0                             | 1,157                    | 0                        | 570                      | 0                        | 405                      | 0                        | -----                    | 0                        | -----                    |
| Latvia.....                                      | 110                           | 1,127                    | 16                       | 183                      | 0                        | 24                       | 35                       | 0                        | -----                    | -----                    |
| Norway.....                                      | 8                             | 714                      | 13                       | 69                       | 5                        | 857                      | 4                        | 41                       | -----                    | 8                        |
| Estonia.....                                     | 0                             | 693                      | 0                        | 534                      | 0                        | 24                       | 0                        | 0                        | 0                        | 0                        |
| Australia.....                                   | 155                           | 276                      | 267                      | 25                       | 360                      | 19                       | 392                      | 16                       | -----                    | -----                    |
| Union of South<br>Africa.....                    | 148                           | 160                      | 84                       | 104                      | 84                       | 96                       | 42                       | 71                       | 55                       | 90                       |
| Japan.....                                       | 0                             | 96                       | 0                        | 9                        | 0                        | 8                        | 0                        | 3                        | 0                        | -----                    |
| <b>Total.....</b>                                | <b>3,863</b>                  | <b>89,367</b>            | <b>3,480</b>             | <b>107,167</b>           | <b>2,490</b>             | <b>96,498</b>            | <b>1,599</b>             | <b>71,337</b>            | <b>983</b>               | <b>57,375</b>            |

<sup>1</sup> Preliminary.<sup>2</sup> 3-year average.<sup>3</sup> Imports for consumption.<sup>4</sup> Monthly Crop Report and Agricultural Statistics, International Institute of Agriculture.<sup>5</sup> Calendar year.<sup>6</sup> Year beginning Aug. 1, International Yearbook of Agricultural Statistics.

Bureau of Agricultural Economics; official sources except where otherwise noted.

TABLE 72.—*Barley: Acreage, production, value, and foreign trade, United States, 1919-34*

| Year              | Acreage harvested | Average yield per acre | Production    | Price per bushel received by producers Dec. 1 <sup>1</sup> | Farm value, basis Dec. 1 price | Price per bushel at Chicago, year beginning August <sup>2</sup> | Foreign trade, including barley, flour, and malt, year beginning July <sup>3</sup> |               |                          |                          |
|-------------------|-------------------|------------------------|---------------|--|--------------------------------|---|--|---------------|--------------------------|--------------------------|
|                   |                   |                        |               |  |                                |   | Domestic exports   | Imports       | Net exports <sup>4</sup> |                          |
|                   |                   |                        |               |  |                                |   |  |               | Total                    | Percentage of production |
|                   | 1,000 acres       | Bushels                | 1,000 bushels | Cents  | 1,000 dollars                  | Cents   | 1,000 bushels  | 1,000 bushels | 1,000 bushels            | Percent                  |
| 1919              | 6,478             | 18.9                   | 122,025       |  |                                |   |  |               |                          |                          |
| 1919              | 6,579             | 19.9                   | 131,086       | 124.4  | 163,045                        | 145   | 34,691   | 335           | 34,356                   | 26.2                     |
| 1920              | 7,439             | 23.0                   | 171,042       | 84.4   | 144,276                        | 78  | 27,255   | 20            | 27,234                   | 15.9                     |
| 1921              | 7,074             | 18.8                   | 132,702       | 47.8   | 63,471                         | 61  | 27,546   | 8             | 27,538                   | 20.8                     |
| 1922              | 6,601             | 23.2                   | 152,908       | 49.9   | 76,314                         | 65  | 21,909   | 38            | 21,871                   | 14.3                     |
| 1923              | 7,151             | 22.2                   | 158,994       | 54.6   | 86,868                         | 72  | 13,913   | 55            | 13,858                   | 8.7                      |
| 1924              | 6,787             | 25.5                   | 159,199       |  |                                |   |  |               |                          |                          |
| 1924              | 7,093             | 23.8                   | 167,314       | 74.2   | 124,086                        | 90  | 28,543   | 48            | 28,495                   | 17.0                     |
| 1925              | 8,186             | 23.5                   | 192,779       | 61.4   | 118,355                        | 72  | 30,448   | 53            | 30,395                   | 15.8                     |
| 1926              | 7,917             | 20.8                   | 164,467       | 57.9   | 95,288                         | 77  | 19,655   | 49            | 19,605                   | 12.0                     |
| 1927              | 9,465             | 25.4                   | 240,057       | 68.9   | 165,421                        | 91  | 39,274   | 45            | 39,229                   | 16.3                     |
| 1928              | 12,735            | 25.9                   | 329,625       | 56.8   | 187,133                        | 60  | 60,295   | 45            | 60,249                   | 18.3                     |
| 1929              | 12,891            | 20.4                   | 263,590       |  |                                |   |  |               |                          |                          |
| 1929              | 13,523            | 20.7                   | 280,242       | 53.9   | 150,946                        | 62  | 24,054   | 41            | 24,013                   | 8.6                      |
| 1930              | 12,666            | 24.0                   | 303,752       | 40.4   | 122,620                        | 54  | 11,443   | 1,413         | 10,030                   | 3.3                      |
| 1931              | 11,424            | 17.4                   | 198,543       | 32.5   | 64,563                         | 40  | 5,469  | 1,509         | 3,960                    | 2.0                      |
| 1932              | 13,346            | 22.6                   | 302,042       | 22.0   | 66,394                         | 38  | 9,399  | 1,406         | 7,993                    | 2.6                      |
| 1933              | 10,009            | 15.6                   | 155,825       | 43.3   | 67,531                         | 72  | 6,112  | 4,560         | 1,552                    | 1.0                      |
| 1934 <sup>5</sup> | 7,144             | 16.6                   | 118,929       | 71.0   | 84,439                         |   |  |               |                          |                          |

<sup>1</sup> Beginning with 1919 prices are weighted average prices for crop-marketing season.<sup>2</sup> From Bureau of Labor Statistics, wholesale price bulletins—monthly quotations, August 1919–September 1927, Fair to Good making. Beginning October 1927, grade reported as feeding, but as quality remained unchanged, no change was made in comparative prices.<sup>3</sup> Compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1919–26; January and June issues, 1927–34; and official records of the Bureau of Foreign and Domestic Commerce. Malt converted to terms of barley on the basis that 1.1 bushels of malt is the product of 1 bushel of barley. Barley flour converted on the basis that 1 barrel of flour is the product of 9 bushels of barley. Exports of flour not reported prior to 1919. Barley—imports for consumption, 1919–34. Malt—imports for consumption, 1919–34. Flour—imports for consumption, 1919–34.<sup>4</sup> Total exports (domestic exports plus reexports) minus total imports.<sup>5</sup> Preliminary.

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Production figures are estimates of the Crop Reporting Board, revised 1919–23. See introductory text. Italic figures are census returns.

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TABLE 73.—Barley: Acreage, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934

| State and division  | Acreage harvested |             |                   | Yield per acre   |         |                   | Production       |               |                   | Price for crop of— |                   |
|---------------------|-------------------|-------------|-------------------|------------------|---------|-------------------|------------------|---------------|-------------------|--------------------|-------------------|
|                     | Average, 1927-31  | 1933        | 1934 <sup>1</sup> | Average, 1922-31 | 1933    | 1934 <sup>1</sup> | Average, 1927-31 | 1933          | 1934 <sup>1</sup> | 1933               | 1934 <sup>1</sup> |
|                     | 1,000 acres       | 1,000 acres | 1,000 acres       | Bushels          | Bushels | Bushels           | 1,000 bushels    | 1,000 bushels | 1,000 bushels     | Cents              | Cents             |
| Maine.....          | 3                 | 5           | 4                 | 29.6             | 31.0    | 30.0              | 87               | 155           | 120               | 64                 | 73                |
| Vermont.....        | 5                 | 4           | 4                 | 23.5             | 24.0    | 27.0              | 132              | 96            | 108               | 65                 | 74                |
| New York.....       | 187               | 165         | 162               | 27.0             | 20.0    | 24.5              | 4,975            | 3,300         | 3,969             | 57                 | 71                |
| New Jersey.....     | 1                 | 1           | 1                 | 28.8             | 28.0    | 27.0              | 31               | 28            | 27                | 58                 | 61                |
| Pennsylvania.....   | 38                | 81          | 68                | 23.7             | 25.0    | 25.5              | 951              | 2,025         | 1,734             | 58                 | 66                |
| North Atlantic..... | 234               | 256         | 239               | 26.8             | 21.9    | 24.9              | 6,176            | 5,604         | 5,958             | 57.7               | 69.6              |
| Ohio.....           | 152               | 44          | 19                | 26.0             | 15.0    | 17.5              | 3,963            | 660           | 332               | 46                 | 57                |
| Indiana.....        | 47                | 28          | 21                | 21.4             | 10.0    | 13.0              | 1,026            | 280           | 273               | 50                 | 66                |
| Illinois.....       | 405               | 319         | 93                | 29.8             | 15.0    | 9.5               | 11,627           | 4,785         | 884               | 50                 | 79                |
| Michigan.....       | 239               | 250         | 188               | 25.0             | 13.0    | 18.0              | 6,130            | 3,250         | 3,384             | 52                 | 75                |
| Wisconsin.....      | 696               | 805         | 741               | 30.4             | 22.0    | 26.0              | 21,288           | 17,710        | 19,266            | 56                 | 96                |
| Minnesota.....      | 1,929             | 1,850       | 1,536             | 25.4             | 15.5    | 15.7              | 48,121           | 28,675        | 24,115            | 47                 | 84                |
| Iowa.....           | 602               | 538         | 457               | 29.0             | 16.0    | 12.5              | 17,933           | 9,376         | 5,712             | 44                 | 76                |
| Missouri.....       | 12                | 15          | 22                | 19.4             | 17.0    | 10.0              | 237              | 255           | 220               | 57                 | 84                |
| North Dakota.....   | 2,303             | 1,758       | 791               | 18.1             | 10.0    | 9.0               | 39,577           | 17,580        | 7,119             | 35                 | 65                |
| South Dakota.....   | 1,761             | 493         | 237               | 19.0             | 7.0     | 7.5               | 32,485           | 3,451         | 1,778             | 39                 | 70                |
| Nebraska.....       | 574               | 799         | 360               | 21.6             | 10.5    | 7.5               | 13,439           | 8,390         | 2,700             | 29                 | 58                |
| Kansas.....         | 548               | 408         | 265               | 15.4             | 8.0     | 7.5               | 9,628            | 3,264         | 1,988             | 39                 | 70                |
| North Central.....  | 9,289             | 7,355       | 4,730             | 22.1             | 13.3    | 14.3              | 205,453          | 97,676        | 67,771            | 44.4               | 82.2              |
| Maryland.....       | 11                | 23          | 22                | 28.9             | 26.0    | 28.5              | 322              | 568           | 627               | 52                 | 59                |
| Virginia.....       | 14                | 35          | 36                | 26.3             | 24.5    | 24.5              | 380              | 858           | 832               | 60                 | 65                |
| West Virginia.....  | 4                 | 4           | 4                 | 23.0             | 20.0    | 20.0              | 92               | 92            | 80                | 56                 | 67                |
| North Carolina..... | 18                | 17          | 16                | 18.5             | 16.0    | 17.0              | 336              | 272           | 272               | 79                 | 80                |
| South Atlantic..... | 43                | 79          | 78                | 24.8             | 23.0    | 23.9              | 1,049            | 1,820         | 1,861             | 60.1               | 65.3              |
| Kentucky.....       | 6                 | 12          | 10                | 23.4             | 23.0    | 21.0              | 160              | 276           | 210               | 58                 | 66                |
| Tennessee.....      | 14                | 21          | 19                | 18.2             | 18.0    | 17.0              | 256              | 378           | 323               | 67                 | 79                |
| Oklahoma.....       | 76                | 80          | 110               | 15.2             | 9.0     | 11.5              | 1,205            | 1,220         | 1,265             | 47                 | 63                |
| Texas.....          | 194               | 172         | 189               | 18.3             | 10.0    | 13.0              | 3,472            | 7,720         | 2,457             | 45                 | 59                |
| South Central.....  | 291               | 285         | 328               | 17.3             | 10.9    | 13.0              | 5,093            | 3,094         | 4,255             | 49.3               | 62.1              |
| Montana.....        | 208               | 176         | 123               | 22.6             | 13.5    | 18.0              | 4,585            | 2,376         | 2,214             | 38                 | 60                |
| Idaho.....          | 136               | 143         | 134               | 30.8             | 29.0    | 32.0              | 4,319            | 4,147         | 4,288             | 35                 | 52                |
| Wyoming.....        | 108               | 89          | 43                | 22.2             | 12.0    | 18.0              | 2,305            | 1,602         | 774               | 39                 | 70                |
| Colorado.....       | 513               | 430         | 189               | 18.6             | 16.0    | 16.0              | 9,966            | 6,880         | 3,024             | 31                 | 70                |
| New Mexico.....     | 9                 | 13          | 10                | 17.4             | 18.0    | 12.0              | 168              | 234           | 120               | 46                 | 73                |
| Arizona.....        | 9                 | 20          | 22                | 30.5             | 35.0    | 29.0              | 296              | 700           | 638               | 49                 | 53                |
| Utah.....           | 36                | 37          | 31                | 35.3             | 31.0    | 27.0              | 1,401            | 1,147         | 837               | 40                 | 63                |
| Nevada.....         | 6                 | 5           | 5                 | 37.2             | 30.0    | 28.0              | 237              | 150           | 140               | 48                 | 59                |
| Washington.....     | 55                | 74          | 59                | 31.4             | 35.0    | 30.0              | 1,813            | 2,590         | 1,770             | 40                 | 55                |
| Oregon.....         | 75                | 113         | 98                | 27.6             | 29.5    | 28.5              | 2,262            | 3,334         | 2,597             | 41                 | 62                |
| California.....     | 969               | 934         | 1,055             | 26.4             | 26.2    | 21.5              | 25,320           | 24,471        | 22,682            | 40                 | 48                |
| Western.....        | 2,126             | 2,034       | 1,769             | 25.1             | 23.4    | 22.1              | 52,673           | 47,631        | 39,064            | 38.4               | 53.0              |
| United States.....  | 11,963            | 10,009      | 7,144             | 22.7             | 15.6    | 16.6              | 270,444          | 155,825       | 118,929           | 43.3               | 71.0              |

<sup>1</sup> Preliminary.<sup>2</sup> 8-year average.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 74.—Barley: Acreage, yield per acre, and production in specified countries, average 1931-32 to 1934-35

| Country   | Acreage                             |                |                |                |                      | Yield per acre                      |                  |                  |                  |                      | Production                          |                  |                  |                  |                      |
|---|-------------------------------------|----------------|----------------|----------------|----------------------|-------------------------------------|------------------|------------------|------------------|----------------------|-------------------------------------|------------------|------------------|------------------|----------------------|
|   | Average<br>1921-22<br>to<br>1925-26 | 1931-32        | 1932-33        | 1933-34        | 1934-35 <sup>1</sup> | Average<br>1921-22<br>to<br>1925-26 | 1931-32          | 1932-33          | 1933-34          | 1934-35 <sup>1</sup> | Average<br>1921-22<br>to<br>1925-26 | 1931-32          | 1932-33          | 1933-34          | 1934-35 <sup>1</sup> |
| NORTHERN HEMISPHERE   |                                     |                |                |                |                      |                                     |                  |                  |                  |                      |                                     |                  |                  |                  |                      |
| North America:  | 1,000<br>acres                      | 1,000<br>acres | 1,000<br>acres | 1,000<br>acres | 1,000<br>acres       | 1,000<br>bushels                    | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels     | 1,000<br>bushels                    | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels     |
| Canada.....   | 3,022                               | 3,768          | 3,758          | 3,658          | 3,612                | 25.4                                | 17.9             | 21.5             | 17.3             | 17.0                 | 70,899                              | 67,983           | 80,773           | 83,359           | 83,742               |
| United States.....  | 7,210                               | 11,424         | 13,346         | 10,009         | 7,144                | 22.3                                | 17.4             | 22.6             | 15.6             | 16.6                 | 160,639                             | 198,543          | 302,042          | 155,825          | 118,929              |
| Mexico.....   | 647                                 | 370            | 394            | 382            | -----                | 6.0                                 | 8.5              | 7.7              | 8.3              | -----                | 3,909                               | 3,188            | 3,051            | 3,156            | -----                |
| Estimated North American total.....                           | 10,000                              | 15,600         | 17,500         | 14,000         | 11,100               | -----                               | -----            | -----            | -----            | -----                | 242,000                             | 299,000          | 386,000          | 222,000          | 186,000              |
| Europe:   | 1,352                               | 1,029          | 961            | 751            | 861                  | 34.2                                | 35.0             | 37.3             | 39.2             | 39.4                 | 46,274                              | 30,000           | 35,798           | 20,456           | 33,927               |
| England and Wales.....  | 165                                 | 88             | 60             | 60             | 96                   | 38.6                                | 39.2             | 44.6             | 44.2             | 43.8                 | 6,092                               | 3,453            | 3,080            | 2,060            | 4,200                |
| Scotland.....   | 183                                 | 110            | 103            | 117            | 143                  | 38.3                                | 42.4             | 48.3             | 47.7             | 45.7                 | 5,981                               | 4,921            | 4,974            | 5,582            | 6,533                |
| Irish Free State.....   | 137                                 | 138            | 137            | 142            | 147                  | 32.0                                | 30.5             | 30.7             | 32.4             | 37.3                 | 4,383                               | 4,207            | 5,433            | 4,597            | 5,488                |
| Norway.....   | 400                                 | 311            | 263            | 278            | 340                  | 31.6                                | 32.9             | 37.2             | 35.6             | 36.2                 | 12,921                              | 10,238           | 10,904           | 9,922            | 9,461                |
| Sweden.....   | 695                                 | 889            | 854            | 805            | 840                  | 40.4                                | 46.1             | 54.3             | 60.9             | 65.8                 | 32,246                              | 43,972           | 40,348           | 44,023           | 43,033               |
| Denmark.....  | 83                                  | 71             | 49             | 44             | 70                   | 52.4                                | 49.5             | 51.0             | 62.5             | 55.9                 | 3,302                               | 3,274            | 2,498            | 2,311            | 4,409                |
| Netherlands.....  | 84                                  | 83             | 84             | 92             | 97                   | 49.1                                | 48.4             | 50.0             | 60.1             | 49.8                 | 4,127                               | 4,018            | 4,730            | 4,613            | 4,853                |
| Belgium.....  | 1,713                               | 1,805          | 1,779          | 1,726          | 1,911                | 25.6                                | 25.6             | 28.1             | 27.4             | 27.3                 | 43,892                              | 47,730           | 50,015           | 52,592           | 52,213               |
| France.....   | 4,343                               | 4,644          | 4,837          | 4,633          | 4,502                | 21.2                                | 19.5             | 27.4             | 21.6             | 28.7                 | 92,268                              | 90,724           | 132,565          | 100,005          | 120,101              |
| Spain.....  | 382                                 | 170            | 192            | 210            | 511                  | 11.3                                | 11.9             | 10.9             | 6.8              | -----                | 2,053                               | 2,025            | 2,094            | 1,438            | 2,346                |
| Portugal.....   | 567                                 | 596            | 520            | 611            | 492                  | 18.1                                | 20.6             | 21.9             | 20.4             | 19.0                 | 10,283                              | 11,061           | 11,367           | 10,400           | 9,347                |
| Italy.....  | 3,198                               | 4,001          | 3,875          | 3,918          | 4,030                | 31.3                                | 34.6             | 38.1             | 40.7             | 36.5                 | 100,182                             | 138,622          | 147,647          | 169,287          | 147,152              |
| Germany.....  | 1,331                               | 1,416          | 1,423          | 1,423          | 1,416                | 22.2                                | 23.9             | 29.8             | 36.1             | 32.9                 | 7,341                               | 9,948            | 12,589           | 15,290           | 13,091               |
| Austria.....  | 1,070                               | 1,775          | 1,750          | 1,639          | 1,632                | 30.0                                | 27.8             | 39.3             | 37.8             | 29.1                 | 50,119                              | 49,356           | 69,119           | 62,029           | 47,508               |
| Czechoslovakia.....   | 1,096                               | 1,165          | 1,160          | 1,197          | 1,213                | 20.3                                | 18.8             | 28.5             | 32.3             | 16.9                 | 22,198                              | 21,867           | 33,029           | 38,647           | 20,530               |
| Hungary.....  | 1,061                               | 1,065          | 1,006          | 1,078          | 1,038                | 15.6                                | 16.9             | 17.9             | 19.7             | 18.1                 | 14,027                              | 17,999           | 17,982           | 21,267           | 18,744               |
| Yugoslavia.....   | 383                                 | 554            | 536            | 553            | 589                  | 14.8                                | 12.9             | 16.6             | 19.1             | 20.2                 | 5,676                               | 7,146            | 8,882            | 10,539           | 11,891               |
| Greece.....   | 530                                 | 695            | 670            | 692            | 669                  | 17.2                                | 26.2             | 23.8             | 26.8             | 15.0                 | 9,200                               | 15,800           | 13,572           | 16,147           | 8,522                |
| Bulgaria.....   | 4,315                               | 4,742          | 4,415          | 4,485          | 4,332                | 12.8                                | 13.7             | 15.3             | 19.3             | 9.4                  | 55,295                              | 64,902           | 67,335           | 86,543           | 40,650               |
| Rumania.....  | 2,547                               | 3,144          | 2,982          | 2,882          | 2,945                | 19.6                                | 21.6             | 21.6             | 22.9             | 20.1                 | 49,850                              | 67,779           | 64,339           | 65,949           | 53,060               |
| Poland.....   | 451                                 | 480            | 497            | 512            | 503                  | 20.5                                | 22.8             | 22.1             | 19.1             | 21.9                 | 9,234                               | 11,065           | 10,975           | 9,709            | 11,000               |
| Lithuania.....  | 414                                 | 463            | 457            | 456            | 445                  | 16.9                                | 19.4             | 19.4             | 19.6             | 22.5                 | 6,979                               | 8,808            | 8,955            | 10,002           | 8,955                |
| Latvia.....   | 303                                 | 279            | 286            | 256            | 257                  | 18.0                                | 21.2             | 17.3             | 14.6             | 20.5                 | 5,464                               | 5,917            | 4,607            | 3,731            | 5,273                |
| Estonia.....  | 273                                 | 292            | 308            | 320            | 325                  | 21.2                                | 20.0             | 26.7             | 25.5             | 30.9                 | 5,782                               | 7,605            | 8,218            | 8,175            | 10,036               |
| Finland.....  | 14,793                              | 16,936         | 16,912         | 17,932         | -----                | 14.2                                | 14.0             | 13.7             | 20.1             | -----                | 210,447                             | 237,913          | 231,024          | 300,470          | -----                |
| Union of Soviet Socialist Republics.....                      | 26,099                              | 28,749         | 27,950         | 27,551         | 27,723               | 23.1                                | 23.9             | 27.7             | 28.0             | 25.5                 | 603,182                             | 686,618          | 774,876          | 772,489          | 707,228              |
| Total Europe reporting area and<br>production, all years..... | 26,099                              | 28,749         | 27,950         | 27,551         | 27,723               | 23.1                                | 23.9             | 27.7             | 28.0             | 25.5                 | 603,182                             | 686,618          | 774,876          | 772,489          | 707,228              |

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| Estimated European total excluding Union of Soviet Socialist Republics                                  |         |         |         |         |         |      |      |      |             |             |             |             |             |
|---|---------|---------|---------|---------|---------|------|------|------|-------------|-------------|-------------|-------------|-------------|
|   | 28, 300 | 29, 000 | 28, 200 | 27, 800 | 28, 000 |      |      |      | 600, 000    | 600, 000    | 770, 000    | 775, 000    | 711, 000    |
| <b>Africa:</b>  |         |         |         |         |         |      |      |      |             |             |             |             |             |
| Morocco.....  | 2, 862  | 3, 221  | 3, 208  | 3, 762  | 3, 703  | 14.1 | 18.3 | 14.3 | 40, 304     | 50, 030     | 47, 146     | 50, 408     | 64, 303     |
| Algeria.....  | 3, 017  | 3, 178  | 3, 239  | 3, 450  | 3, 093  | 10.2 | 8.5  | 9.3  | 30, 779     | 27, 068     | 30, 901     | 35, 091     | 38, 121     |
| Tunisia.....  | 1, 035  | 1, 223  | 1, 507  | 927     | 988     | 6.6  | 6.8  | 10.4 | 6, 843      | 8, 268      | 15, 616     | 7, 849      | 6, 890      |
| Egypt.....  | 381     | 306     | 266     | 292     | 284     | 30.0 | 31.7 | 33.0 | 11, 427     | 9, 693      | 12, 066     | 9, 236      | 9, 082      |
| Estimated African total.....  | 8, 100  | 8, 500  | 9, 300  | 9, 000  | 8, 700  |      |      |      | 101, 000    | 111, 000    | 115, 000    | 111, 000    | 125, 000    |
| <b>Asia:</b>  |         |         |         |         |         |      |      |      |             |             |             |             |             |
| Turkey.....   | 2, 146  | 3, 769  | 3, 401  | 3, 312  | 3, 294  | 20.5 | 20.2 | 14.2 | 57, 482     | 76, 184     | 48, 228     | 73, 432     | 86, 811     |
| India.....  | 7, 501  | 7, 635  | 7, 384  | 7, 405  |         | 17.8 | 14.6 | 15.1 | 133, 793    | 111, 027    | 111, 440    | 109, 713    |             |
| Syria and Lebanon.....  | 4, 796  | 845     | 776     | 763     | 604     | 49.5 | 16.9 | 11.7 | 7, 300      | 14, 314     | 9, 115      | 13, 002     | 11, 148     |
| Japan.....  | 2, 630  | 2, 097  | 2, 107  | 1, 924  | 1, 862  | 31.4 | 36.5 | 34.8 | 82, 490     | 77, 741     | 77, 741     | 60, 082     | 71, 507     |
| China.....  | 2, 131  | 2, 410  | 2, 445  | 2, 494  | 2, 179  | 17.2 | 17.4 | 17.9 | 36, 007     | 41, 861     | 43, 862     | 44, 409     | 47, 163     |
| Estimated Asiatic total.....  | 17, 200 | 19, 500 | 18, 800 | 18, 800 | 18, 400 |      |      |      | 247, 000    | 266, 000    | 318, 000    | 336, 000    | 357, 000    |
| <b>Total Northern Hemisphere countries reporting area and production, all years.....</b>                | 51, 327 | 60, 900 | 62, 203 | 58, 122 | 54, 576 | 21.7 | 20.7 | 23.2 | 1, 114, 252 | 1, 205, 480 | 1, 442, 384 | 1, 292, 542 | 1, 224, 374 |
| <b>Estimated Northern Hemisphere total excluding Union of Soviet Socialist Republics and China.....</b> | 62, 500 | 72, 000 | 73, 800 | 69, 600 | 66, 200 |      |      |      | 1, 206, 000 | 1, 428, 000 | 1, 593, 000 | 1, 444, 000 | 1, 370, 000 |
| <b>SOUTHERN HEMISPHERE</b>  |         |         |         |         |         |      |      |      |             |             |             |             |             |
| Chile.....  | 162     | 106     | 155     | 235     | 151     | 33.0 | 28.2 | 40.0 | 5, 347      | 3, 097      | 6, 203      | 6, 723      |             |
| Argentina.....  | 594     | 1, 011  | 1, 283  | 1, 379  | 1, 705  | 19.7 | 19.6 | 25.1 | 9, 924      | 19, 771     | 32, 150     | 36, 068     | 42, 714     |
| Union of South Africa.....  | 97      | 76      |         |         | 83      | 12.3 |      |      | 1, 380      |             | 9, 156      |             |             |
| Australia.....  | 307     | 342     | 443     |         |         | 19.7 | 19.2 | 20.6 | 6, 048      |             |             |             |             |
| Estimated Southern Hemisphere total.....  | 1, 500  | 2, 000  | 2, 400  | 2, 700  | 2, 900  |      |      |      | 31, 000     | 39, 000     | 57, 000     | 60, 000     | 65, 000     |
| <b>Total Northern and Southern Hemisphere countries reporting area and production, all years.....</b>   | 51, 831 | 62, 001 | 63, 576 | 59, 501 | 56, 281 | 21.7 | 20.7 | 23.2 | 1, 124, 176 | 1, 285, 251 | 1, 474, 514 | 1, 328, 550 | 1, 297, 088 |
| <b>Estimated world total, excluding Union of Soviet Socialist Republics and China.....</b>              | 64, 000 | 74, 000 | 76, 400 | 72, 300 | 69, 100 |      |      |      | 1, 327, 000 | 1, 465, 000 | 1, 655, 000 | 1, 504, 000 | 1, 444, 000 |

1 Preliminary.

2 2-year average.

3 1 year only.

4 4-year average.

1 Preliminary.

2 2-year average.

3 1 year only.

4 4-year average.

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Both acreage and production figures refer to the year of harvest. Harvests of the Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow; thus, for 1934-35 the crop harvested in the Northern Hemisphere countries in 1934 is combined with the Southern Hemisphere harvest which begins late in 1934 and ends early in 1935.



TABLE 75.—*Barley: Production, world and selected countries, 1894-95 to 1934-35*

| Crop year                  | Esti-<br>mated<br>world,<br>exclud-<br>ing<br>Russia | Esti-<br>mated<br>Europe,<br>exclud-<br>ing<br>Russia | Selected countries         |                            |                            |                            |                            |                            |                            |                            |
|----------------------------|--|---|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
|                            |  |   | United<br>States           | Rus-<br>sia <sup>1</sup>   | Ger-<br>many               | Japan                      | Canada                     | India                      | Spain                      | Ru-<br>mania               |
|                            | <i>Million<br/>bushels</i>                           | <i>Million<br/>bushels</i>                            | <i>Million<br/>bushels</i> | <i>Million<br/>bushels</i> | <i>Million<br/>bushels</i> | <i>Million<br/>bushels</i> | <i>Million<br/>bushels</i> | <i>Million<br/>bushels</i> | <i>Million<br/>bushels</i> | <i>Million<br/>bushels</i> |
| 1894-95.....               | 1,034  | 547   | 74                         | 197                        | 133                        | 81                         | .....                      | .....                      | 57                         | 17                         |
| 1895-96.....               | 1,001  | 529   | 104                        | 226                        | 131                        | 80                         | .....                      | .....                      | 47                         | 22                         |
| 1896-97.....               | 974  | 530   | 97                         | 254                        | 127                        | 71                         | .....                      | .....                      | 36                         | 32                         |
| 1897-98.....               | 909  | 483   | 103                        | 259                        | 120                        | 73                         | .....                      | .....                      | 46                         | 21                         |
| 1898-99.....               | 1,040  | 505   | 98                         | 307                        | 132                        | 83                         | .....                      | .....                      | 73                         | 30                         |
| 1899-1900.....             | 1,021  | 528   | 118                        | 227                        | 140                        | 77                         | .....                      | .....                      | 54                         | 5                          |
| 1900-1.....                | 1,035  | 525   | 97                         | 237                        | 141                        | 82                         | .....                      | .....                      | 57                         | 15                         |
| 1901-2.....                | 1,080  | 573   | 124                        | 240                        | 156                        | 83                         | .....                      | .....                      | 80                         | 24                         |
| 1902-3.....                | 1,127  | 595   | 146                        | 338                        | 145                        | 74                         | .....                      | .....                      | 81                         | 25                         |
| 1903-4.....                | 1,108  | 598   | 149                        | 357                        | 156                        | 60                         | .....                      | .....                      | 64                         | 30                         |
| 1904-5.....                | 1,074  | 515   | 166                        | 346                        | 138                        | 81                         | .....                      | .....                      | 54                         | 12                         |
| 1905-6.....                | 1,071  | 535   | 172                        | 347                        | 137                        | 77                         | .....                      | .....                      | 46                         | 26                         |
| 1906-7.....                | 1,215  | 613   | 179                        | 331                        | 146                        | 84                         | .....                      | .....                      | 90                         | 34                         |
| 1907-8.....                | 1,145  | 572   | 151                        | 377                        | 164                        | 90                         | .....                      | .....                      | 54                         | 20                         |
| 1908-9.....                | 1,121  | 539   | 171                        | 402                        | 143                        | 87                         | 47                         | .....                      | 70                         | 13                         |
| 1909-10.....               | 1,326  | 624   | 173                        | 502                        | 164                        | 87                         | 55                         | .....                      | 79                         | 20                         |
| 1910-11.....               | 1,213  | 563   | 142                        | 488                        | 136                        | 82                         | 29                         | .....                      | 76                         | 29                         |
| 1911-12.....               | 1,314  | 609   | 145                        | 437                        | 148                        | 86                         | 44                         | .....                      | 87                         | 26                         |
| 1912-13.....               | 1,322  | 592   | 197                        | 496                        | 163                        | 91                         | 49                         | .....                      | 60                         | 21                         |
| 1913-14.....               | 1,379  | 635   | 159                        | 600                        | 172                        | 101                        | 48                         | .....                      | 69                         | 27                         |
| 1914-15.....               | 1,198  | 547   | 178                        | 433                        | 144                        | 86                         | 36                         | 125                        | 72                         | 26                         |
| 1915-16.....               | 1,222  | 477   | 207                        | 429                        | 114                        | 95                         | 54                         | 143                        | 84                         | 29                         |
| 1916-17.....               | 1,178  | 507   | 159                        | 305                        | 128                        | 89                         | 43                         | 148                        | 87                         | 30                         |
| 1917-18.....               | 1,140  | 427   | 182                        | 325                        | 86                         | 89                         | 55                         | 156                        | 78                         | .....                      |
| 1918-19.....               | 1,246  | 424   | 225                        | .....                      | 94                         | 89                         | 77                         | 156                        | 90                         | 5                          |
| 1919-20.....               | 1,104  | 483   | 131                        | .....                      | 77                         | 95                         | 56                         | 130                        | 82                         | 32                         |
| 1920-21.....               | 1,233  | 554   | 171                        | 216                        | 82                         | 92                         | 63                         | 150                        | 90                         | 68                         |
| 1921-22.....               | 1,220  | 557   | 133                        | 118                        | 89                         | 88                         | 60                         | 117                        | 89                         | 44                         |
| 1922-23.....               | 1,277  | 588   | 153                        | 197                        | 74                         | 87                         | 72                         | 146                        | 78                         | 94                         |
| 1923-24.....               | 1,377  | 649   | 159                        | 282                        | 108                        | 71                         | 77                         | 145                        | 112                        | 61                         |
| 1924-25.....               | 1,297  | 586   | 167                        | 201                        | 110                        | 75                         | 89                         | 137                        | 84                         | 31                         |
| 1925-26.....               | 1,465  | 672   | 193                        | 275                        | 119                        | 91                         | 87                         | 123                        | 99                         | 47                         |
| 1926-27.....               | 1,435  | 674   | 164                        | 252                        | 113                        | 88                         | 100                        | 121                        | 96                         | 77                         |
| 1927-28.....               | 1,457  | 659   | 240                        | 206                        | 126                        | 82                         | 97                         | 119                        | 92                         | 53                         |
| 1928-29.....               | 1,670  | 743   | 330                        | 260                        | 154                        | 81                         | 136                        | 98                         | 82                         | 69                         |
| 1929-30.....               | 1,740  | 828   | 280                        | 331                        | 146                        | 80                         | 102                        | 118                        | 97                         | 128                        |
| 1930-31.....               | 1,676  | 759   | 304                        | 311                        | 131                        | 72                         | 135                        | 107                        | 104                        | 109                        |
| 1931-32.....               | 1,465  | 690   | 199                        | 238                        | 139                        | 77                         | 67                         | 112                        | 91                         | 65                         |
| 1932-33.....               | 1,655  | 779   | 302                        | 231                        | 148                        | 78                         | 81                         | 111                        | 133                        | 67                         |
| 1933-34.....               | 1,504  | 775   | 156                        | 360                        | 159                        | 67                         | 63                         | 110                        | 100                        | 87                         |
| 1934-35 <sup>2</sup> ..... | 1,444  | 711   | 119                        | .....                      | 147                        | 72                         | 64                         | .....                      | 129                        | 41                         |

<sup>1</sup> Includes all Russian territory reporting for the years shown.<sup>2</sup> Total Russian Empire exclusive of the 10 Vistula Provinces of Russian Poland and the Province of Batum in Transcaucasia.<sup>3</sup> Exclusive of Russian Poland, Lithuania, parts of present Latvia and the Ukraine, and 2 provinces of Transcaucasia.<sup>4</sup> Beginning this year, estimates within present boundaries of the Union of Soviet Socialist Republics excluding Turkestan, Transcaucasia, and the Far East, which regions in 1924-25 produced 20,897,000 bushels.<sup>5</sup> Post-war boundaries beginning this year, and therefore not comparable with earlier years.<sup>6</sup> Beginning this year weighed bushels, those reported for the earlier years being measured bushels.<sup>7</sup> Preliminary.

Bureau of Agricultural Economics; official sources and International Institute of Agriculture.

Production figures refer to the year of harvest. Harvests of the Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow; thus, for 1934-35 the crop harvested in the Northern Hemisphere countries in 1934 is combined with the Southern Hemisphere harvest which begins late in 1934 and ends early in 1935.

TABLE 76.—*Barley: Monthly marketings by farmers, as reported by about 3,500 mills and elevators, United States, 1924-25 to 1933-34*

| Season       | Percentage of receipts during— |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |  |
|--------------|--------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|--|
|              | June                           | July                 | Aug.                 | Sept.                | Oct.                 | Nov.                 | Dec.                 | Jan.                 | Feb.                 | Mar.                 | Apr.                 | May                  | June                 | Season               |  |
|              | <i>Per-<br/>cent</i>           | <i>Per-<br/>cent</i> | <i>Per-<br/>cent</i> | <i>Per-<br/>cent</i> | <i>Per-<br/>cent</i> | <i>Per-<br/>cent</i> | <i>Per-<br/>cent</i> | <i>Per-<br/>cent</i> | <i>Per-<br/>cent</i> | <i>Per-<br/>cent</i> | <i>Per-<br/>cent</i> | <i>Per-<br/>cent</i> | <i>Per-<br/>cent</i> | <i>Per-<br/>cent</i> |  |
| 1924-25..... | 3.2                            | 9.9                  | 16.2                 | 20.1                 | 16.6                 | 8.4                  | 5.9                  | 5.2                  | 3.8                  | 3.4                  | 2.2                  | 2.7                  | 2.4                  | 100.0                |  |
| 1925-26..... | 4.3                            | 14.4                 | 19.0                 | 18.4                 | 11.8                 | 6.9                  | 5.4                  | 4.3                  | 3.5                  | 3.4                  | 2.4                  | 3.6                  | 2.6                  | 100.0                |  |
| 1926-27..... | 5.8                            | 16.1                 | 21.2                 | 12.9                 | 8.8                  | 7.0                  | 5.3                  | 5.3                  | 3.2                  | 3.8                  | 3.7                  | 3.8                  | 3.1                  | 100.0                |  |
| 1927-28..... | 6.3                            | 9.5                  | 18.2                 | 19.8                 | 12.3                 | 7.7                  | 6.0                  | 4.9                  | 4.5                  | 4.5                  | 2.3                  | 2.1                  | 1.9                  | 100.0                |  |
| 1928-29..... | 6.1                            | 10.4                 | 21.8                 | 18.7                 | 12.1                 | 7.1                  | 5.9                  | 3.6                  | 3.7                  | 3.2                  | 2.7                  | 2.4                  | 2.3                  | 100.0                |  |
| 1929-30..... | 7.2                            | 17.4                 | 25.3                 | 13.4                 | 9.2                  | 5.7                  | 4.7                  | 3.6                  | 3.0                  | 3.0                  | 2.7                  | 2.9                  | 1.9                  | 100.0                |  |
| 1930-31..... | 9.0                            | 8.8                  | 24.9                 | 16.6                 | 10.4                 | 6.0                  | 5.1                  | 4.5                  | 3.5                  | 3.3                  | 3.1                  | 3.1                  | 1.7                  | 100.0                |  |
| 1931-32..... | 4.0                            | 16.4                 | 21.5                 | 13.8                 | 10.5                 | 6.2                  | 5.5                  | 4.5                  | 3.9                  | 4.4                  | 4.2                  | 3.4                  | 1.7                  | 100.0                |  |
| 1932-33..... | 8.6                            | 30.5                 | 13.8                 | 7.5                  | 5.6                  | 4.7                  | 2.8                  | 2.6                  | 4.1                  | 6.6                  | 7.6                  | 5.3                  | .3                   | 100.0                |  |
| 1933-34..... | 10.0                           | 19.1                 | 25.6                 | 11.7                 | 6.6                  | 3.9                  | 3.4                  | 3.4                  | 3.1                  | 3.6                  | 3.1                  | 4.0                  | 2.5                  | 100.0                |  |

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TABLE 77.—*Barley: Receipts graded by licensed inspectors, all inspection points, total of all classes under each grade, 1926-27 to 1933-34*

| Year beginning July  | Grade        |             |              |               |             |              |             |             |             |             |             | Total       |
|----------------------|--------------|-------------|--------------|---------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                      | Choice No. 1 | No. 1       | Choice No. 2 | Special No. 2 | No. 2       | Choice No. 3 | No. 3       | No. 4       | No. 5       | No. 1 feed  | Sample      |             |
|                      | <i>Cars</i>  | <i>Cars</i> | <i>Cars</i>  | <i>Cars</i>   | <i>Cars</i> | <i>Cars</i>  | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> |
| 1926-27 <sup>1</sup> | 251          | 481         | 107          | 2,168         | 2,005       | 421          | 4,929       | 4,026       | 266         | 916         | 15,063      | 30,633      |
| 1927-28              | 262          | 2,199       | 90           | 14,913        | 12,151      | 274          | 16,299      | 6,197       | 183         | 2,875       | 10,923      | 66,366      |
| 1928-29              | 329          | 966         | 100          | 13,128        | 20,900      | 392          | 25,264      | 20,129      | 135         | 6,502       | 11,021      | 98,866      |
| 1929-30              | 223          | 700         | 50           | 9,966         | 5,800       | 315          | 13,907      | 7,269       | 102         | 3,602       | 5,124       | 47,058      |
| 1930-31              | 261          | 1,483       | 76           | 11,629        | 7,067       | 249          | 12,489      | 6,305       | 127         | 2,034       | 1,927       | 43,647      |
| 1931-32              | 142          | 568         | 35           | 6,014         | 2,410       | 130          | 8,958       | 2,743       | 146         | 565         | 873         | 22,884      |
| 1932-33              | 530          | 764         | 50           | 13,111        | 1,551       | 152          | 8,601       | 1,639       | 80          | 301         | 4,817       | 31,596      |
| 1933-34              | 596          | 959         | 130          | 14,394        | 2,670       | 239          | 9,693       | 1,620       | 100         | 805         | 2,765       | 33,971      |

<sup>1</sup> Barley grades became effective Aug. 24, 1926.

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TABLE 78.—*Barley: Commercial stocks, 1926-27 to 1934-35*DOMESTIC BARLEY IN UNITED STATES<sup>1</sup>

| Year    | Aug.                 | Sept.                | Oct.                 | Nov.                 | Dec.                 | Jan.                 | Feb.                 | Mar.                 | Apr.                 | May                  | June                 | July                 |
|---------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|         | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> |
| 1926-27 |                      |                      |                      |                      |                      | 7,097                | 6,664                | 6,116                | 5,339                | 3,875                | 2,513                | 2,720                |
| 1927-28 | 3,108                | 5,041                | 6,549                | 5,957                | 5,769                | 4,825                | 4,419                | 4,273                | 4,588                | 3,890                | 2,410                | 2,801                |
| 1928-29 | 3,467                | 9,318                | 10,681               | 11,067               | 11,744               | 10,926               | 11,985               | 11,599               | 9,998                | 8,412                | 7,373                | 6,861                |
| 1929-30 | 8,803                | 12,894               | 12,563               | 12,721               | 11,760               | 11,866               | 10,961               | 10,415               | 9,726                | 8,137                | 6,843                | 6,366                |
| 1930-31 | 6,746                | 10,945               | 16,094               | 15,018               | 14,637               | 13,987               | 14,261               | 12,279               | 9,464                | 7,819                | 6,232                | 6,826                |
| 1931-32 | 6,568                | 7,093                | 7,211                | 7,355                | 7,124                | 6,164                | 5,710                | 5,135                | 4,179                | 3,732                | 2,848                | 2,793                |
| 1932-33 | 3,440                | 6,631                | 8,676                | 9,380                | 9,862                | 10,245               | 10,415               | 10,121               | 9,948                | 9,599                | 13,181               | 13,417               |
| 1933-34 | 14,587               | 17,975               | 18,330               | 20,176               | 19,958               | 18,291               | 17,236               | 16,123               | 14,535               | 13,010               | 11,322               | 10,693               |
| 1934-35 | 9,945                | 13,264               | 17,744               | 17,531               | 19,164               |                      |                      |                      |                      |                      |                      |                      |

UNITED STATES BARLEY IN CANADA<sup>2</sup>

|         |     |     |       |       |       |       |     |     |     |     |     |     |
|---------|-----|-----|-------|-------|-------|-------|-----|-----|-----|-----|-----|-----|
| 1926-27 |     |     |       |       |       | 272   | 300 | 64  | 70  | 59  | 0   | 13  |
| 1927-28 | 5   | 66  | 665   | 344   | 152   | 40    | 42  | 9   | 25  | 9   | 1   | 20  |
| 1928-29 | 0   | 767 | 4,171 | 5,599 | 2,319 | 1,144 | 302 | 173 | 170 | 81  | 92  | 659 |
| 1929-30 | 779 | 246 | 1,341 | 1,749 | 955   | 955   | 937 | 938 | 936 | 993 | 963 | 937 |
| 1930-31 | 279 | 652 | 580   | 444   | 371   | 338   | 309 | 291 | 264 | 243 | 68  | 45  |
| 1931-32 | 45  | 24  | 24    | 24    | 24    | 25    | 25  | 25  | 25  | 25  | 77  | 6   |
| 1932-33 | 1   | 130 | 114   | 111   | 21    | 21    | 21  | 21  | 21  | 21  | 21  | 21  |
| 1933-34 | 0   | 0   | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 1934-35 | 0   | 0   | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 0   | 0   | 0   |

CANADIAN BARLEY IN CANADA<sup>3</sup>

|         |        |        |        |        |        |        |        |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1926-27 |        |        |        |        |        | 11,082 | 9,618  | 10,218 | 10,513 | 6,378  | 3,830  | 2,335  |
| 1927-28 | 2,447  | 1,000  | 3,574  | 6,162  | 7,231  | 7,972  | 8,342  | 8,548  | 8,623  | 8,218  | 4,312  | 2,895  |
| 1928-29 | 1,452  | 1,356  | 9,010  | 14,134 | 13,419 | 16,926 | 16,393 | 17,488 | 18,317 | 13,305 | 11,008 | 8,664  |
| 1929-30 | 6,997  | 3,285  | 18,101 | 22,701 | 25,027 | 26,495 | 25,989 | 24,685 | 23,422 | 21,507 | 20,827 | 20,065 |
| 1930-31 | 18,031 | 20,035 | 28,459 | 31,047 | 30,043 | 30,021 | 29,162 | 28,259 | 26,798 | 23,053 | 14,886 | 11,158 |
| 1931-32 | 10,142 | 8,468  | 11,334 | 11,270 | 9,633  | 9,970  | 9,878  | 9,631  | 9,620  | 7,949  | 6,160  | 4,344  |
| 1932-33 | 3,672  | 3,293  | 5,723  | 5,339  | 6,024  | 6,794  | 6,776  | 6,679  | 6,790  | 6,576  | 6,281  | 6,966  |
| 1933-34 | 7,783  | 8,917  | 10,623 | 11,940 | 11,868 | 11,605 | 11,045 | 10,808 | 10,536 | 9,801  | 9,211  | 9,060  |
| 1934-35 | 9,049  | 9,120  | 13,140 | 13,936 | 11,613 |        |        |        |        |        |        |        |

CANADIAN BARLEY IN UNITED STATES<sup>4</sup>

|         |       |       |       |       |       |       |       |       |       |       |       |       |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1926-27 |       |       |       |       |       | 2,942 | 2,246 | 1,677 | 608   | 2,401 | 975   | 175   |
| 1927-28 | 19    | 27    |       | 717   | 1,768 | 1,945 | 1,686 | 1,191 | 557   | 112   | 493   | 278   |
| 1928-29 | 408   | 249   | 1,751 | 2,959 | 4,778 | 6,210 | 4,731 | 3,332 | 2,259 | 2,523 | 3,815 | 2,110 |
| 1929-30 | 2,277 | 1,711 | 1,654 | 1,999 | 2,637 | 2,818 | 3,006 | 2,928 | 2,781 | 2,715 | 2,876 | 2,876 |
| 1930-31 | 1,859 | 1,300 | 898   | 832   | 1,691 | 1,223 | 1,274 | 1,267 | 764   | 764   | 627   | 163   |
| 1931-32 | 119   | 3     | 4     | 4     | 649   | 1,537 | 1,537 | 1,552 | 1,479 | 1,272 | 285   | 57    |
| 1932-33 | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 1933-34 | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 1934-35 | 1     | 259   | 412   | 606   | 883   |       |       |       |       |       |       |       |

<sup>1</sup> Includes domestic barley in store in public and private elevators in 41 markets and barley afloat in vessels or barges in harbors of lake and seaboard ports. Does not include barley in transit either by rail or water, stocks in mills, or mill elevators attached to mills, or private stocks of barley intended for local use.<sup>2</sup> Includes United States barley in store at 15 Canadian points or afloat in vessels or barges in the harbors of lake and seaboard ports. Does not include barley in transit to Canadian ports.<sup>3</sup> Includes practically all Canadian barley held within Canadian boundaries, exclusive of farm and certain mill stocks.<sup>4</sup> Includes Canadian barley in store and afloat at 10 United States lake and seaboard ports but not Canadian barley in transit on lakes or canals.

Bureau of Agricultural Economics; compiled from weekly reports to the grain, hay, and feed market news service.

Data for domestic and Canadian barley in United States are for stocks on the Saturday nearest the 1st day of the month; for United States and Canadian barley in Canada data are for stocks on the Friday nearest the 1st day of the month.

TABLE 79.—*Barley: Supply and distribution in continental United States, 1926-27 to 1934-35*

| Year beginning August | Supply        |                        |                    |  |                     |                     | Distribution             |               |                    |
|-----------------------|---------------|------------------------|--------------------|--|---------------------|---------------------|--------------------------|---------------|--------------------|
|                       | Production    | Stocks on farms Aug. 1 | Farm supply Aug. 1 | Commercial stocks, Aug. 1 <sup>1</sup> | Total stocks Aug. 1 | Total supply Aug. 1 | Net exports <sup>2</sup> | Disappearance | Stocks end of year |
|                       | 1,000 bushels | 1,000 bushels          | 1,000 bushels      | 1,000 bushels                          | 1,000 bushels       | 1,000 bushels       | 1,000 bushels            | 1,000 bushels | 1,000 bushels      |
| 1926-27               | 164,467       | 8,752                  | 173,219            | 2,299                                  | 11,051              | 175,518             | 20,512                   | 148,448       | 6,558              |
| 1927-28               | 240,057       | 3,450                  | 243,507            | 3,108                                  | 6,558               | 246,615             | 38,967                   | 197,083       | 10,565             |
| 1928-29               | 329,625       | 7,098                  | 336,723            | 3,467                                  | 10,565              | 340,190             | 62,172                   | 253,097       | 24,921             |
| 1929-30               | 280,242       | 16,123                 | 296,365            | 8,798                                  | 24,921              | 305,163             | 20,630                   | 266,110       | 18,423             |
| 1930-31               | 303,752       | 11,677                 | 315,429            | 6,746                                  | 18,423              | 322,175             | 11,510                   | 290,884       | 20,081             |
| 1931-32               | 198,543       | 13,513                 | 212,056            | 6,568                                  | 20,081              | 218,624             | 4,060                    | 205,125       | 9,409              |
| 1932-33               | 302,042       | 5,969                  | 308,011            | 3,440                                  | 9,409               | 311,451             | 9,428                    | 271,422       | 30,606             |
| 1933-34               | 155,825       | 16,019                 | 171,844            | 14,537                                 | 30,606              | 186,431             | 4,932                    |               |                    |
| 1934-35               | 118,929       |                        |                    |  |                     |                     |                          |               |                    |

<sup>1</sup> For August 1926, Bradstreet's visible supply.<sup>2</sup> Includes barley, barley flour, and malt. Barrel of flour calculated as equal to 9 bushels of grain, and 1.1 bushels of malt equal to 1 bushel of grain.

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TABLE 80.—*Barley: Average price per bushel received by producers, United States 1925-26 to 1934-35*

| Year    | July 15    | Aug. 15    | Sept. 15   | Oct. 15    | Nov. 15    | Dec. 15    | Jan. 15    | Feb. 15    | Mar. 15    | Apr. 15    | May 15     | June 15    | Weighted average |
|---------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------------|
| 1925-26 | Cents 73.5 | Cents 67.1 | Cents 60.8 | Cents 57.6 | Cents 58.0 | Cents 58.4 | Cents 59.5 | Cents 56.3 | Cents 54.6 | Cents 54.8 | Cents 55.1 | Cents 53.7 | Cents 61.4       |
| 1926-27 | 55.3       | 55.0       | 52.9       | 54.4       | 56.0       | 58.4       | 58.0       | 61.3       | 62.2       | 64.1       | 63.4       | 78.3       | 57.9             |
| 1927-28 | 71.4       | 69.0       | 69.5       | 66.8       | 66.8       | 71.5       | 73.6       | 75.4       | 79.4       | 81.3       | 84.5       | 81.7       | 68.9             |
| 1928-29 | 77.6       | 58.9       | 54.1       | 55.2       | 54.5       | 55.0       | 56.2       | 60.5       | 60.1       | 58.0       | 55.3       | 52.6       | 56.8             |
| 1929-30 | 55.6       | 55.8       | 55.2       | 54.7       | 53.8       | 54.6       | 53.9       | 52.5       | 51.4       | 51.7       | 50.5       | 47.5       | 53.9             |
| 1930-31 | 40.0       | 43.6       | 45.3       | 41.9       | 38.3       | 38.8       | 36.6       | 35.3       | 34.4       | 35.2       | 35.5       | 32.6       | 40.4             |
| 1931-32 | 30.0       | 28.9       | 30.9       | 31.6       | 35.5       | 35.7       | 35.7       | 35.8       | 37.2       | 37.1       | 33.7       | 28.7       | 32.5             |
| 1932-33 | 24.6       | 21.1       | 20.1       | 18.2       | 20.1       | 19.3       | 18.4       | 17.9       | 18.3       | 23.4       | 29.9       | 28.3       | 22.0             |
| 1933-34 | 47.6       | 40.2       | 42.8       | 40.7       | 41.6       | 40.6       | 43.7       | 44.7       | 43.7       | 42.5       | 42.2       | 50.9       | 43.3             |
| 1934-35 | 52.6       | 63.5       | 78.2       | 75.5       | 75.9       | 79.7       |            |            |            |            |            |            | 71.0             |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 yearbook, table 90. Only monthly prices are comparable.

TABLE 81.—*Barley, No. 2: Weighted average price per bushel of reported cash sales, Minneapolis, 1925-26 to 1934-35*

| Year    | Aug.     | Sept.    | Oct.     | Nov.     | Dec.     | Jan.     | Feb.     | Mar.     | Apr.     | May      | June     | July     | Weighted average |
|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|------------------|
| 1925-26 | Cents 72 | Cents 66 | Cents 65 | Cents 63 | Cents 65 | Cents 65 | Cents 62 | Cents 63 | Cents 65 | Cents 64 | Cents 67 | Cents 67 | 67               |
| 1926-27 | 63       | 62       | 65       | 64       | 67       | 69       | 71       | 72       | 77       | 88       | 88       | 81       | 71               |
| 1927-28 | 77       | 72       | 73       | 77       | 83       | 84       | 87       | 90       | 92       | 93       | 94       | 85       | 84               |
| 1928-29 | 65       | 63       | 63       | 62       | 62       | 66       | 70       | 67       | 65       | 60       | 60       | 69       | 65               |
| 1929-30 | 62       | 63       | 59       | 60       | 60       | 58       | 57       | 56       | 57       | 56       | 50       | 48       | 59               |
| 1930-31 | 53       | 54       | 52       | 48       | 47       | 44       | 44       | 44       | 48       | 45       | 39       | 42       | 47               |
| 1931-32 | 45       | 50       | 50       | 51       | 51       | 51       | 52       | 53       | 51       | 44       | 35       | 31       | 43               |
| 1932-33 | 51       | 52       | 29       | 31       | 29       | 26       | 25       | 30       | 40       | 45       | 43       | 64       | 39               |
| 1933-34 | 58       | 69       | 67       | 63       | 68       | 71       | 71       | 70       | 68       | 72       | 85       | 91       | 70               |
| 1934-35 | 100      | 116      | 110      | 117      | 120      |          |          |          |          |          |          |          |                  |

<sup>1</sup> No. 2 Barley, including Special No. 2.<sup>2</sup> Special No. 2 Barley, August 1929 to June 1934.<sup>3</sup> No. 2 Malting Barley, July 1934 to end of table.

Bureau of Agricultural Economics; computed by weighting selling prices by number of car lots sold, as reported in Minneapolis Daily Market Record.

Prices 1909-10 to 1924-25 appear in 1932 Yearbook, table 89.

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TABLE 82.—*Barley, excluding flour and malt: International trade, average 1925-26 to 1929-30, annual 1930-31 to 1933-34*

| Country                             | Year beginning July        |               |               |               |               |               |               |               |                      |               |
|-------------------------------------|----------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------------|---------------|
|                                     | Average 1925-26 to 1929-30 |               | 1930-31       |               | 1931-32       |               | 1932-33       |               | 1933-34 <sup>1</sup> |               |
|                                     | Ex-ports                   | Im-ports      | Ex-ports      | Im-ports      | Ex-ports      | Im-ports      | Ex-ports      | Im-ports      | Ex-ports             | Im-ports      |
| PRINCIPAL EX-PORTING COUNTRIES      | 1,000 bushels              | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels        | 1,000 bushels |
| United States.....                  | 31,869                     | 0             | 10,302        | 0             | 5,034         | 0             | 9,155         | 0             | 5,935                | 30            |
| Rumania.....                        | 30,308                     | 0             | 74,095        | 2             | 32,767        | 0             | 23,214        | 0             | 31,734               | 9             |
| Canada.....                         | 28,724                     | 14            | 16,603        | 1             | 14,449        | 2             | 6,750         | 1             | 1,547                | 2             |
| Union of Soviet Socialist Republics | 16,561                     | 0             | 49,831        | 0             | 37,544        | 0             | 16,555        | 0             | 25,898               | 0             |
| Argentina.....                      | 9,355                      | 4             | 11,612        | 0             | 13,822        | 0             | 17,431        | 0             | 24,080               | 0             |
| Poland.....                         | 7,120                      | 90            | 6,091         | 2             | 6,550         | 0             | 7,355         | 2             | 6,968                | 0             |
| Czechoslovakia.....                 | 5,301                      | 366           | 6,252         | 8             | 4,121         | 4             | 7,869         | 4             | 2,331                | 6             |
| Algeria.....                        | 4,701                      | 750           | 3,076         | 782           | 1,287         | 5,656         | 306           | 4,405         | 2,345                | 1,041         |
| Tunis.....                          | 4,291                      | 477           | 621           | 894           | 1,013         | 1,158         | 6,253         | 80            | 307                  | 1,223         |
| Chile.....                          | 2,936                      | 0             | 1,166         | 0             | 1,079         | 0             | 595           | 0             | 3,744                | 0             |
| Hungary.....                        | 2,611                      | 3             | 1,231         | 7             | 108           | 81            | 2,870         | 0             | 2,499                | 0             |
| British India.....                  | 2,169                      | 0             | 261           | 5             | 1,793         | 0             | 11            | 41            | 7                    | 0             |
| Bulgaria.....                       | 1,650                      | 0             | 3,307         | 0             | 892           | 0             | 276           | 0             | 1,176                | 0             |
| Australia.....                      | 1,235                      | 1             | 3,467         | 0             | 3,453         | 0             | 3,178         | 1             | 2,806                | 0             |
| Yugoslavia.....                     | 790                        | 412           | 160           | 306           | 62            | 130           | 27            | 11            | 445                  | 6             |
| Spain.....                          | 531                        | 379           | 335           | 0             | 44            | 0             | 118           | 0             | 94                   | 0             |
| Sweden.....                         | 507                        | 13            | 4             | 41            | 41            | 5             | 3             | 0             | 9                    | 0             |
| Egypt.....                          | 311                        | 213           | 5             | 239           | 3             | 661           | 230           | 6-2           | 330                  | 1             |
| Total.....                          | 150,970                    | 2,724         | 183,419       | 2,287         | 124,112       | 7,697         | 102,196       | 4,543         | 112,305              | 2,318         |
| PRINCIPAL IM-PORTING COUNTRIES      |                            |               |               |               |               |               |               |               |                      |               |
| Germany.....                        | 642                        | 83,542        | 423           | 36,660        | 38            | 34,823        | 8             | 8,536         | 3                    | 15,717        |
| United Kingdom.....                 |                            | 32,134        |               | 37,827        |               | 30,797        |               | 26,750        |                      | 42,595        |
| Netherlands.....                    | 790                        | 14,460        | 1,232         | 30,204        | 563           | 20,030        | 220           | 17,798        | 73                   | 23,969        |
| Belgium.....                        | 258                        | 13,586        | 2,200         | 21,566        | 3,427         | 20,327        | 2,985         | 19,194        | 1,365                | 18,410        |
| Denmark.....                        | 2,891                      | 3,494         | 2,569         | 30,974        | 990           | 8,200         | 931           | 4,881         | 2,005                | 3,013         |
| Switzerland.....                    | 0                          | 3,306         | 1             | 5,770         | 2             | 6,383         | 2             | 9,031         | 1                    | 4,756         |
| Austria.....                        | 7,194                      | 3,163         | 36            | 4,644         | 3             | 4,350         | 3             | 3,872         | 5                    | 5,434         |
| France.....                         | 1,044                      | 2,830         | 87            | 15,100        | 34            | 19,515        | 9             | 16,705        | 1                    | 8,261         |
| Norway.....                         | 0                          | 1,382         | 0             | 2,293         | 0             | 1,737         | 0             | 345           | 0                    | 613           |
| Irish Free State.....               | 430                        | 885           | 42            | 595           | 52            | 996           |               | 645           |                      | 447           |
| Greece.....                         | 0                          | 593           | 0             | 171           | 0             | 355           | 0             | 43            | 0                    | 7             |
| Estonia.....                        | 0                          | 244           | 0             | 34            | 0             | 0             | 0             | 0             | 0                    | 0             |
| Italy.....                          | 23                         | 209           | 0             | 1,206         | 0             | 1,382         | 1             | 1,224         | 1                    | 2,245         |
| Total.....                          | 6,212                      | 159,828       | 6,590         | 187,044       | 5,109         | 148,995       | 4,169         | 109,024       | 3,454                | 125,467       |

<sup>1</sup> Preliminary.<sup>2</sup> Imports for consumption.<sup>3</sup> Monthly Crop Report and Agricultural Statistics, International Institute of Agriculture.<sup>4</sup> 3-year average.<sup>5</sup> Calendar year.<sup>6</sup> Excess of reexports over imports.<sup>7</sup> 4-year average.

Bureau of Agricultural Economics; official sources except where otherwise noted.

TABLE 83.—*Flaxseed: Acreage, production, value, foreign trade, and net supply, United States, 1909-34*

| Year              | Acreage harvested | Average yield per acre | Production    | Price per bushel received by producers Dec. 1 <sup>1</sup> | Farm value, basis Dec. 1 price | Price per bushel of No. 1 flaxseed at Minneapolis, year beginning Aug. 1 <sup>2</sup> | Flaxseed, including linseed oil, in terms of seed, year beginning September <sup>3</sup> |                               |                          | Net supply    |
|-------------------|-------------------|------------------------|---------------|--|--------------------------------|---|--|-------------------------------|--------------------------|---------------|
|                   |                   |                        |               |  |                                |   | Imports  | Exports, domestic and foreign | Net imports <sup>4</sup> |               |
|                   | 1,000 acres       | Bushels                | 1,000 bushels | Cents  | 1,000 dollars                  | Cents   | 1,000 bushels  | 1,000 bushels                 | 1,000 bushels            | 1,000 bushels |
| 1909              | 2,083             | 9.4                    | 19,513        |  |                                |   |  |                               |                          |               |
| 1909              | 2,083             | 9.5                    | 19,699        | 152.8  | 30,093                         | 197   | 6,074  | 152                           | 5,922                    | 25,621        |
| 1910              | 2,467             | 5.2                    | 12,718        | 231.7  | 29,472                         | 250   | 12,010   | 73                            | 11,937                   | 24,655        |
| 1911              | 2,757             | 7.0                    | 19,370        | 182.1  | 35,272                         | 218   | 7,848  | 126                           | 7,722                    | 27,092        |
| 1912              | 2,851             | 9.8                    | 28,073        | 114.7  | 32,202                         | 142   | 3,845  | 897                           | 2,948                    | 31,021        |
| 1913              | 2,291             | 7.8                    | 17,853        | 119.9  | 21,899                         | 150   | 9,772  | 216                           | 9,556                    | 27,409        |
| 1914              | 1,645             | 8.4                    | 13,749        | 126.0  | 17,318                         | 170   | 12,729   | 571                           | 12,158                   | 25,907        |
| 1915              | 1,987             | 10.1                   | 14,080        | 174.0  | 24,410                         | 200   | 14,441   | 313                           | 14,128                   | 28,158        |
| 1916              | 1,474             | 9.7                    | 14,296        | 248.6  | 35,541                         | 280   | 10,946   | 507                           | 10,439                   | 24,735        |
| 1917              | 1,984             | 4.6                    | 9,164         | 296.6  | 27,182                         | 370   | 14,042   | 467                           | 13,575                   | 22,739        |
| 1918              | 1,910             | 7.0                    | 13,369        | 340.1  | 45,470                         | 407   | 9,230  | 482                           | 8,748                    | 22,117        |
| 1919              | 1,801             | 5.3                    | 6,653         |  |                                |   |  |                               |                          |               |
| 1919              | 1,293             | 5.2                    | 6,770         | 442.1  | 29,932                         | 473   | 26,488   | 467                           | 26,016                   | 32,786        |
| 1920              | 1,647             | 6.6                    | 10,900        | 232.8  | 25,375                         | 220   | 16,174   | 219                           | 15,955                   | 26,855        |
| 1921              | 1,143             | 7.1                    | 8,107         | 165.4  | 13,411                         | 216   | 23,389   | 149                           | 23,240                   | 31,347        |
| 1922              | 1,113             | 9.5                    | 10,520        | 207.6  | 21,836                         | 259   | 29,009   | 161                           | 28,848                   | 39,368        |
| 1923              | 2,015             | 8.2                    | 16,563        | 212.5  | 35,192                         | 244   | 19,557   | 145                           | 19,412                   | 35,975        |
| 1924              | 3,455             | 8.2                    | 28,246        |  |                                |   |  |                               |                          |               |
| 1924              | 3,535             | 8.8                    | 31,237        | 217.9  | 68,055                         | 263   | 12,849   | 124                           | 12,725                   | 43,962        |
| 1925              | 3,022             | 7.4                    | 22,387        | 226.4  | 50,582                         | 253   | 20,858   | 148                           | 20,710                   | 43,047        |
| 1926              | 2,736             | 6.8                    | 18,587        | 203.2  | 37,685                         | 225   | 24,155   | 112                           | 24,043                   | 42,580        |
| 1927              | 2,763             | 9.1                    | 25,183        | 192.5  | 43,488                         | 221   | 13,177   | 120                           | 13,057                   | 43,240        |
| 1928              | 2,611             | 7.3                    | 19,140        | 193.9  | 37,118                         | 229   | 23,611   | 106                           | 23,505                   | 42,645        |
| 1929              | 2,966             | 5.1                    | 15,046        |  |                                |   |  |                               |                          |               |
| 1929              | 3,047             | 5.2                    | 15,910        | 281.2  | 44,733                         | 311   | 18,537   | 109                           | 18,428                   | 34,338        |
| 1930              | 3,736             | 5.7                    | 21,287        | 161.0  | 34,278                         | 176   | 9,938  | 69                            | 9,869                    | 31,156        |
| 1931              | 2,416             | 4.9                    | 11,798        | 116.6  | 13,758                         | 136   | 10,949   | 46                            | 10,903                   | 22,701        |
| 1932              | 1,975             | 5.9                    | 11,671        | 88.1   | 10,280                         | 118   | 9,414  | 39                            | 9,375                    | 21,046        |
| 1933              | 1,328             | 5.2                    | 6,947         | 162.6  | 11,296                         | 187   | 16,806   | 38                            | 16,768                   | 23,715        |
| 1934 <sup>5</sup> | 974               | 5.4                    | 5,253         | 172.7  | 9,070                          |   |  |                               |                          |               |

<sup>1</sup> Beginning with 1919 prices are weighted average prices for crop-marketing season.<sup>2</sup> The figures shown, 1909-20, are averages of daily closing prices compiled from annual reports of the Minneapolis Chamber of Commerce; beginning 1921 averages of daily prices weighted by car-lot sales, compiled from Minneapolis Daily Market Record.<sup>3</sup> Compiled from Commerce and Navigation of the United States, 1909-17; Foreign Commerce and Navigation of the United States, 1918; Monthly Summary of Foreign Commerce of the United States June, July, and August issues, 1919-26, January, June, July, and August issues, 1927-34, and official records of the Bureau of Foreign and Domestic Commerce. 1 bushel of flaxseed weighs 56 pounds; 1 bushel of seed yields approximately 2½ gallons of oil; and 1 gallon of oil weighs 7½ pounds.<sup>4</sup> Total imports minus total exports (domestic plus foreign). Beginning 1933-34 imports for consumption minus domestic exports. (See introductory text.)<sup>5</sup> Preliminary.

Bureau of Agricultural Economics.

Production figures are estimates of the Crop Reporting Board, revised 1919-28. See introductory text. Italic figures are census returns. See 1927 Yearbook, table 89, for data for earlier years.

## STATISTICS OF GRAINS

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TABLE 84.—*Flaxseed: Acreage, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934*

| State              | Acreage harvested |             |                   | Yield per acre   |         |                   | Production       |               |                   | Price for crop of— |                   |
|--------------------|-------------------|-------------|-------------------|------------------|---------|-------------------|------------------|---------------|-------------------|--------------------|-------------------|
|                    | Average, 1927-31  | 1933        | 1934 <sup>1</sup> | Average, 1922-31 | 1933    | 1934 <sup>1</sup> | Average, 1927-31 | 1933          | 1934 <sup>1</sup> | 1933               | 1934 <sup>1</sup> |
|                    | 1,000 acres       | 1,000 acres | 1,000 acres       | Bushels          | Bushels | Bushels           | 1,000 bushels    | 1,000 bushels | 1,000 bushels     | Cents              | Cents             |
| Wisconsin.....     | 8                 | 4           | 5                 | 11.8             | 10.0    | 11.0              | 92               | 40            | 55                | 150                | 163               |
| Minnesota.....     | 720               | 682         | 580               | 9.4              | 6.4     | 6.0               | 6,241            | 4,365         | 3,480             | 166                | 176               |
| Iowa.....          | 19                | 28          | 21                | 9.9              | 6.5     | 6.5               | 184              | 182           | 136               | 162                | 176               |
| Missouri.....      | 3                 | 2           | 2                 | 5.8              | 5.5     | 3.5               | 15               | 11            | 7                 | 155                | 155               |
| North Dakota.....  | 1,296             | 462         | 268               | 6.6              | 3.9     | 3.5               | 7,351            | 1,802         | 938               | 159                | 167               |
| South Dakota.....  | 530               | 46          | 17                | 6.6              | 2.5     | 2.5               | 3,065            | 115           | 42                | 159                | 169               |
| Nebraska.....      | 14                | 2           | ( <sup>2</sup> )  | 7.8              | 6.0     | 6.0               | 91               | 12            | -----             | 145                | -----             |
| Kansas.....        | 36                | 36          | 50                | 6.2              | 6.2     | 5.5               | 215              | 223           | 275               | 148                | 152               |
| Montana.....       | 274               | 64          | 19                | 5.9              | 3.0     | 4.0               | 1,329            | 192           | 76                | 144                | 156               |
| Wyoming.....       | 16                | 2           | 1                 | 5.8              | 2.5     | 2.0               | 81               | 5             | 2                 | 138                | 155               |
| California.....    | -----             | -----       | 11                | -----            | -----   | 22.0              | -----            | -----         | 242               | -----              | 177               |
| United States..... | 2,915             | 1,328       | 974               | 7.3              | 5.2     | 5.4               | 18,664           | 6,947         | 5,253             | 162.6              | 172.7             |

<sup>1</sup> Preliminary.<sup>2</sup> 8-year average.<sup>3</sup> Less than 500 acres.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 85.—*Flaxseed: Production, world and selected countries, 1919-20 to 1934-35*

| Crop year    | World, including Union of Soviet Socialist Republics <sup>1</sup> | Northern Hemisphere, including Union of Soviet Socialist Republics | Europe, including Union of Soviet Socialist Republics | Selected countries |                                     |               |               |               |               |                        |               |
|--------------|---|--|---|--------------------|-------------------------------------|---------------|---------------|---------------|---------------|------------------------|---------------|
|              |   |  |   | Argentina          | Union of Soviet Socialist Republics | United States | India         | Canada        | Poland        | Lithuania <sup>2</sup> | Uruguay       |
|              | 1,000 bushels   | 1,000 bushels  | 1,000 bushels   | 1,000 bushels      | 1,000 bushels                       | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels          | 1,000 bushels |
| 1919-20..... | 86,465  | 36,877   | 13,425  | 49,590             | 8,000                               | 6,770         | 9,400         | 5,473         | 556           | 827                    | 932           |
| 1920-21..... | 113,534   | 52,361   | 14,894  | 60,006             | 9,204                               | 10,900        | 16,760        | 7,998         | 637           | 1,011                  | 966           |
| 1921-22..... | 75,121  | 38,427   | 14,424  | 36,046             | 9,752                               | 8,107         | 10,800        | 4,112         | 856           | 909                    | 519           |
| 1922-23..... | 98,745  | 50,236   | 16,813  | 47,577             | 11,043                              | 10,520        | 17,440        | 5,008         | 1,816         | 1,108                  | 719           |
| 1923-24..... | 125,098   | 65,797   | 19,664  | 58,005             | 13,379                              | 16,563        | 21,320        | 7,140         | 2,129         | 1,056                  | 1,178         |
| 1924-25..... | 131,221   | 84,460   | 23,982  | 45,084             | 16,960                              | 31,237        | 18,520        | 9,695         | 1,872         | 1,332                  | 1,542         |
| 1925-26..... | 159,128   | 81,876   | 32,391  | 75,113             | 23,991                              | 22,337        | 20,040        | 6,237         | 2,260         | 1,571                  | 2,030         |
| 1926-27..... | 153,945   | 71,080   | 28,361  | 80,783             | 20,877                              | 18,537        | 16,080        | 5,995         | 2,472         | 1,574                  | 1,970         |
| 1927-28..... | 158,194   | 76,715   | 29,146  | 82,672             | 21,814                              | 25,183        | 16,240        | 4,885         | 2,790         | 1,405                  | 1,954         |
| 1928-29..... | 150,000   | 68,607   | 30,530  | 78,877             | 23,690                              | 19,140        | 13,920        | 3,614         | 2,413         | 1,000                  | 2,030         |
| 1929-30..... | 122,764   | 69,269   | 37,776  | 50,004             | 28,060                              | 15,910        | 12,880        | 2,060         | 8,173         | 1,718                  | 3,228         |
| 1930-31..... | 155,100   | 79,376   | 37,815  | 70,284             | 29,957                              | 21,237        | 15,200        | 4,399         | 2,335         | 1,532                  | 5,056         |
| 1931-32..... | 166,000   | 71,100   | 38,927  | 89,067             | 33,069                              | 11,798        | 15,080        | 2,465         | 1,941         | 1,003                  | 4,337         |
| 1932-33..... | 133,000   | 68,000   | 36,020  | 62,006             | 31,494                              | 11,671        | 16,640        | 2,719         | 1,640         | 626                    | 1,475         |
| 1933-34..... | 121,300   | 61,500   | 35,837  | 56,890             | 30,707                              | 6,947         | 16,240        | 632           | 1,774         | 323                    | 2,876         |
| 1934-35..... | -----   | -----  | -----   | 72,043             | -----                               | 5,253         | 15,080        | 910           | -----         | 1,015                  | 4,747         |

<sup>1</sup> Excludes a few minor producing countries for which no statistics are available and which do not enter into world trade.<sup>2</sup> Flax and hemp.<sup>3</sup> Estimate of Bureau of Agricultural Economics.

Bureau of Agricultural Economics; official sources and International Institute of Agriculture.

Production figures refer to the year of harvest. Harvests of the Northern Hemisphere countries are combined with those of the Southern Hemisphere, which immediately follow; thus, for 1934-35 the crop harvested in the Northern Hemisphere countries in 1934 is combined with the Southern Hemisphere harvest which begins late in 1934 and ends early in 1935.

TABLE 86.—Flax: Average and production in specified countries, average 1921-22 to 1925-26, annual 1931-32 to 1934-35

| Country  | Acreage                          |                  |                  |                  |                  | Seed production                  |                  |                  |                  |                  | Fiber production                 |                 |                 |                 |                 |
|--|----------------------------------|------------------|------------------|------------------|------------------|----------------------------------|------------------|------------------|------------------|------------------|----------------------------------|-----------------|-----------------|-----------------|-----------------|
|  | Average<br>1921-22<br>to 1925-26 | 1931-32          | 1932-33          | 1933-34          | 1934-35          | Average<br>1921-22<br>to 1925-26 | 1931-32          | 1932-33          | 1933-34          | 1934-<br>35      | Average<br>1921-22<br>to 1925-26 | 1931-32         | 1932-33         | 1933-34         | 1934-35         |
| NORTHERN HEMISPHERE  |                                  |                  |                  |                  |                  |                                  |                  |                  |                  |                  |                                  |                 |                 |                 |                 |
| North America:   |                                  |                  |                  |                  |                  |                                  |                  |                  |                  |                  |                                  |                 |                 |                 |                 |
| Canada.....  | 769,552                          | Acres<br>627,430 | Acres<br>461,500 | Acres<br>243,000 | Acres<br>227,000 | 9,438                            | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>pounds                  | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds |
| United States.....   | 2,166,000                        | 2,416,000        | 1,976,000        | 1,328,000        | 974,000          | 17,763                           | 1,000<br>bushels | 2,465            | 2,719            | 6,947            | 1,000<br>pounds                  | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds |
| Total North America.....   | 2,935,552                        | 3,043,430        | 2,436,500        | 1,571,000        | 1,201,000        | 24,191                           | 14,263           | 14,390           | 7,579            | 6,163            |                                  |                 |                 |                 |                 |
| Europe:  |                                  |                  |                  |                  |                  |                                  |                  |                  |                  |                  |                                  |                 |                 |                 |                 |
| United Kingdom:  |                                  |                  |                  |                  |                  |                                  |                  |                  |                  |                  |                                  |                 |                 |                 |                 |
| England and Wales.....   | 7,801                            | 3,196            | 1,311            | 9,784            | 15,684           |                                  |                  |                  |                  |                  | 12,123                           | 3,091           | 2,555           | 4,897           |                 |
| Northern Ireland.....  | 36,297                           | 7,440            | 6,093            |                  |                  | 6                                |                  |                  |                  |                  | 2,682                            | 267             | 190             |                 |                 |
| Irish Free State.....  | 8,285                            | 6,647            | 1,438            |                  |                  |                                  |                  |                  |                  |                  | 685                              | 185             |                 |                 |                 |
| Sweden.....  | 6,651                            | 1,822            | 1,322            |                  |                  |                                  |                  |                  |                  |                  | 16,066                           | 9,918           | 3,395           | 8,695           | 9,921           |
| Netherlands.....   | 27,539                           | 16,185           | 4,930            | 12,071           | 14,930           | 324                              | 139              | 202              | 239              | 270              | 16,166                           | 26,370          | 16,078          | 37,180          | 45,335          |
| Belgium.....   | 40,032                           | 34,000           | 21,000           | 27,000           | 34,000           | 410                              | 326              | 224              | 183              | 270              | 20,370                           | 12,100          | 20,285          | 29,495          |                 |
| France.....  | 45,563                           | 25,619           | 22,644           | 36,927           | 57,975           | 303                              | 233              | 224              | 183              | 378              | 3,278                            | 1,226           | 1,173           |                 |                 |
| Spain.....   | 3,366                            | 2,231            | 2,118            |                  |                  | 48                               | 11               | 10               |                  |                  | 5,156                            | 4,837           | 4,888           | 3,979           | 4,569           |
| Italy.....   | 51,700                           | 24,237           | 11,675           | 9,933            | 9,691            | 461                              | 184              | 124              | 87               | 22               | 19                               | 19              |                 | 34,336          | 56,813          |
| Germany.....   | 104,027                          | 16,368           | 11,149           | 12,081           | 21,663           |                                  |                  |                  |                  |                  | 7,433                            | 10,701          | 5,993           | 6,290           | 4,960           |
| Austria.....   | 9,055                            | 12,801           | 8,000            | 3,000            | 2,768            | 55                               | 33               | 16               | 17               | 19               | 28,397                           | 7,469           | 7,243           | 7,931           | 11,178          |
| Czechoslovakia.....  | 56,438                           | 22,931           | 16,831           | 17,539           | 23,000           | 849                              | 100              | 95               | 105              | 160              | 5,237                            | 13,264          | 5,135           | 7,442           | 2,304           |
| Hungary.....   | 6,918                            | 46,851           | 15,057           | 20,000           | 37,000           | 48                               | 310              | 95               | 202              | 203              | 18,465                           | 23,193          | 21,027          |                 |                 |
| Yugoslavia.....  | 38,179                           | 30,764           | 26,878           | 28,000           |                  |                                  | 40               | 36               |                  |                  | 188                              | 176             | 164             | 235             | 1,271           |
| Bulgaria.....  | 635                              | 1,759            | 998              | 1,171            | 4,317            | 3                                | 19               | 6                | 8                | 34               | 10,770                           | 15,756          | 12,822          |                 |                 |
| Rumania.....   | 40,021                           | 68,660           | 54,080           | 46,391           | 63,000           | 224                              | 523              | 374              | 420              |                  | 75,611                           | 75,611          | 58,431          | 58,686          |                 |
| Poland.....  | 134,000                          | 139,000          | 105,512          | 135,164          | 150,000          | 1,785                            | 1,068            | 628              | 823              | 1,015            | 62,119                           | 46,028          | 31,412          | 39,971          | 49,752          |
| Lithuania.....   | 132,076                          | 104,000          | 78,000           | 103,000          | 114,000          | 1,196                            | 1,068            | 628              | 823              | 1,015            | 28,690                           | 20,812          | 20,812          | 27,337          | 36,310          |
| Latvia.....  | 75,365                           | 45,296           | 36,222           | 41,000           | 63,000           | 387                              | 253              | 153              | 244              |                  | 13,056                           | 13,056          | 8,482           | 11,369          | 16,160          |
| Estonia.....   | 14,761                           | 10,000           | 10,000           | 11,000           | 11,000           |                                  |                  |                  |                  |                  | 3,289                            | 3,002           | 3,282           | 3,959           |                 |
| Finland.....   |                                  |                  |                  |                  |                  |                                  |                  |                  |                  |                  |                                  |                 |                 |                 |                 |
| Union of Soviet Socialist Republics.....   | 2,799,900                        | 7,754,245        | 7,796,005        | 6,757,196        | 5,624,000        | 15,025                           | 33,069           | 31,494           | 30,707           |                  | 644,969                          | 1,212,530       | 1,102,315       | 1,234,693       |                 |
| Total European countries reporting all years, including Union of Soviet Socialist Republics..... | 3,821,520                        | 8,563,652        | 8,429,174        | 7,478,123        | 6,498,942        | 3,667                            | 2,707            | 1,740            | 2,149            | 2,787            | 262,977                          | 173,867         | 114,700         | 170,684         | 211,245         |

|  |            |            |            |            |            |         |         |         |         |         |           |           |           |
|--|------------|------------|------------|------------|------------|---------|---------|---------|---------|---------|-----------|-----------|-----------|
| <b>North Africa:</b>   |            |            |            |            |            |         |         |         |         |         |           |           |           |
| Morocco.....   | 40,844     | 88,000     | 53,437     | 30,000     | 31,000     | 368     | 932     | 369     | 125     |         |           |           |           |
| Tunisia.....   | 6,996      | 7,413      | 6,560      |            | 5,000      | 30      | 47      | 44      |         |         |           |           |           |
| Egypt.....   | 3,181      | 2,098      | 2,346      | 3,472      |            | 81      | 86      | 28      | 49      | 74      | 2,060     | 1,178     | 1,515     |
| <b>Asia:</b>   |            |            |            |            |            |         |         |         |         |         |           |           |           |
| Turkey.....  | 3,216,200  | 68,612     | 23,299     | 85,000     | 85,000     |         | 172     | 190     | 205     | 108     |           |           |           |
| India.....   | 3,008,000  | 3,008,000  | 3,306,000  | 3,267,000  | 3,267,000  | 17,024  | 15,060  | 16,040  | 16,240  | 15,080  |           |           |           |
| Japanese Empire:   |            |            |            |            |            |         |         |         |         |         |           |           |           |
| Japan.....   | 49,911     | 25,180     | 53,885     |            |            | 304     | 123     | 87      |         |         | 61,242    | 38,549    | 25,772    |
| Chosen.....  | 3,386      | 2,551      | 862        |            |            |         | 28      | 4       |         |         | 1,141     | 243       | 47        |
| <b>Total Northern Hemisphere countries re-</b>                                   |            |            |            |            |            |         |         |         |         |         |           |           |           |
| <b>porting all years.....</b>  | 10,016,897 | 14,796,392 | 14,263,806 | 12,467,105 | 11,027,942 | 45,503  | 32,258  | 26,192  | 24,321  |         | 265,067   | 175,045   | 116,201   |
| <b>Estimated Northern Hemisphere total.....</b>                                  |            |            |            |            |            |         |         |         |         |         |           |           |           |
|  | 10,180,000 | 15,000,000 | 14,300,000 | 12,500,000 |            | 64,700  | 71,100  | 68,000  | 61,600  |         | 1,144,200 | 1,381,400 | 1,377,300 |
| <b>SOUTHERN HEMISPHERE</b>   |            |            |            |            |            |         |         |         |         |         |           |           |           |
| Uruguay.....   | 116,270    | 442,705    | 337,175    | 260,425    | 452,771    | 1,198   | 4,837   | 1,475   | 2,876   | 4,747   |           |           |           |
| Argentina.....   | 5,224,757  | 8,178,000  | 5,664,800  | 6,833,393  | 6,918,800  | 52,365  | 89,067  | 62,000  | 50,000  | 72,043  |           |           |           |
| New Zealand.....   | 8,663      | 4,705      | 833        | 1,441      |            | 121     | 20      | 5       | 25      |         |           |           |           |
| <b>Total Southern Hemisphere countries reporting all years.....</b>              |            |            |            |            |            |         |         |         |         |         |           |           |           |
|  | 5,341,026  | 8,620,705  | 5,991,084  | 7,112,818  | 7,371,571  | 53,563  | 93,904  | 63,481  | 50,500  | 76,790  |           |           |           |
| <b>Total Northern and Southern Hemisphere countries reporting all years.....</b> |            |            |            |            |            |         |         |         |         |         |           |           |           |
|  | 15,357,923 | 23,417,157 | 20,245,790 | 19,580,013 | 18,399,513 | 99,066  | 126,162 | 96,469  | 85,783  | 101,069 | 265,067   | 175,045   | 116,201   |
| <b>Estimated world total.....</b>  |            |            |            |            |            |         |         |         |         |         |           |           |           |
|  | 15,592,000 | 23,650,000 | 20,700,000 | 20,150,000 |            | 120,000 | 166,000 | 133,000 | 121,300 |         | 1,144,200 | 1,531,400 | 1,377,300 |

1 Preliminary.

2 Flax and hemp.

3 4-year average.

4 2-year average.

5 Where changes in territory have occurred averages are estimates for territory within present boundary.

6 Acreage figures are for area sown; figures of area harvested are not available for all years, but over a 10-year period the harvested area averaged 10 percent below the sown area.

7 Excludes a few minor producing countries for which no statistics are available and which do not enter into world trade.

Bureau of Agricultural Economics; official sources and International Institute of Agriculture.

Both acreage and production figures refer to the year of harvest.

Harvests of the Northern Hemisphere are combined with those of the Southern Hemisphere which immediately follow; thus, for 1944-45 the crop harvested in the Northern Hemisphere countries in 1934 is combined with the Southern Hemisphere harvest which begins late in 1934 and ends early in 1935.



TABLE 87.—*Flaxseed: Monthly marketings by farmers, as reported by about 3,500 mills and elevators, United States, 1924-25 to 1933-34*

| Year    | Percentage of receipts during— |      |       |      |      |      |      |      |      |      |      |      |       |
|---------|--------------------------------|------|-------|------|------|------|------|------|------|------|------|------|-------|
|         | July <sup>1</sup>              | Aug. | Sept. | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May  | June | Year  |
|         | Pct.                           | Pct. | Pct.  | Pct. | Pct. | Pct. | Pct. | Pct. | Pct. | Pct. | Pct. | Pct. | Pct.  |
| 1924-25 | .5                             | 5.3  | 23.0  | 34.5 | 17.8 | 6.7  | 3.8  | 2.7  | 1.8  | 1.4  | 1.2  | 1.3  | 100.0 |
| 1925-26 | 1.1                            | 11.1 | 34.3  | 23.5 | 12.4 | 5.6  | 2.7  | 2.0  | 1.8  | 1.5  | 1.9  | 2.1  | 100.0 |
| 1926-27 | 1.4                            | 12.0 | 25.5  | 32.5 | 11.2 | 6.3  | 2.4  | 2.3  | 1.7  | .9   | 1.7  | 2.1  | 100.0 |
| 1927-28 | 1.0                            | 6.1  | 32.9  | 33.4 | 10.5 | 5.3  | 3.0  | 1.9  | 1.9  | 1.2  | 1.7  | 1.1  | 100.0 |
| 1928-29 | 1.1                            | 7.2  | 31.1  | 35.3 | 11.6 | 5.3  | 2.1  | 1.2  | 1.4  | 1.0  | 1.5  | 1.2  | 100.0 |
| 1929-30 | 1.9                            | 19.9 | 35.6  | 23.9 | 9.1  | 3.3  | 1.3  | 1.1  | 1.0  | .8   | 1.0  | 1.1  | 100.0 |
| 1930-31 | 2.2                            | 21.3 | 31.4  | 18.5 | 9.0  | 4.3  | 2.6  | 2.5  | 2.0  | 2.3  | 2.1  | 1.8  | 100.0 |
| 1931-32 | 6.4                            | 31.0 | 28.9  | 17.0 | 5.9  | 2.8  | 2.0  | 2.0  | 1.4  | 1.4  | 1.8  | 1.4  | 100.0 |
| 1932-33 | 3.7                            | 28.8 | 28.2  | 15.1 | 6.9  | 4.7  | 3.3  | 1.6  | 1.4  | 2.0  | 2.9  | 3.4  | 100.0 |
| 1933-34 | 3.0                            | 35.5 | 29.9  | 11.1 | 4.5  | 3.3  | 2.1  | 1.8  | 2.0  | 1.8  | 2.7  | 2.3  | 100.0 |

<sup>1</sup> July marketings are composed of receipts of the current year's crop from Kansas, Nebraska, Iowa, and other States in the southern part of the flax belt and receipts of the previous year's crop from the Dakotas, Minnesota, and Montana.

Bureau of Agricultural Economics. Data for earlier years in 1928 Yearbook, table 96.

TABLE 88.—*Flaxseed: Receipts at Minneapolis, by months, 1925-26 to 1934-35*

| Year    | Aug.         | Sept.        | Oct.         | Nov.         | Dec.         | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | July         | Total        |
|---------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|         | 1,000<br>bu. | 1,000<br>bu. | 1,000<br>bu. | 1,000<br>bu. | 1,000<br>bu. | 1,000<br>bu. | 1,000<br>bu. | 1,000<br>bu. | 1,000<br>bu. | 1,000<br>bu. | 1,000<br>bu. | 1,000<br>bu. | 1,000<br>bu. |
| 1925-26 | 1,094        | 3,331        | 2,745        | 1,107        | 722          | 375          | 276          | 320          | 357          | 431          | 360          | 294          | 11,412       |
| 1926-27 | 830          | 1,539        | 2,905        | 1,103        | 669          | 415          | 318          | 273          | 169          | 257          | 277          | 145          | 8,900        |
| 1927-28 | 441          | 4,465        | 3,894        | 1,065        | 490          | 716          | 495          | 471          | 311          | 439          | 457          | 143          | 13,387       |
| 1928-29 | 652          | 3,454        | 3,690        | 1,273        | 601          | 373          | 328          | 328          | 255          | 244          | 330          | 180          | 11,713       |
| 1929-30 | 1,249        | 2,939        | 1,759        | 624          | 403          | 180          | 116          | 133          | 142          | 390          | 313          | 162          | 8,410        |
| 1930-31 | 2,436        | 2,295        | 1,213        | 912          | 472          | 401          | 368          | 449          | 359          | 355          | 511          | 154          | 9,925        |
| 1931-32 | 2,110        | 1,476        | 840          | 321          | 264          | 161          | 93           | 97           | 103          | 164          | 168          | 66           | 5,868        |
| 1932-33 | 1,994        | 1,255        | 696          | 216          | 163          | 329          | 72           | 85           | 134          | 352          | 307          | 112          | 5,720        |
| 1933-34 | 1,024        | 1,120        | 335          | 202          | 119          | 141          | 92           | 119          | 137          | 273          | 256          | 100          | 3,918        |
| 1934-35 | 633          | 1,169        | 875          | 246          | 242          |              |              |              |              |              |              |              |              |

Bureau of Agricultural Economics; compiled from annual reports of the Minneapolis Chamber of Commerce. Data for earlier years in 1928 Yearbook, table 93.

TABLE 89.—*Flaxseed: Commercial stocks, 1926-27 to 1934-35*DOMESTIC FLAXSEED IN UNITED STATES<sup>1</sup>

| Year    | July             | Aug.             | Sept.            | Oct.             | Nov.             | Dec.             | Jan.             | Feb.             | Mar.             | Apr.             | May              | June             |
|---------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|         | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels |
| 1926-27 |                  |                  |                  |                  |                  |                  | 2,684            | 2,328            | 2,089            | 2,014            | 1,834            | 1,429            |
| 1927-28 | 1,445            | 909              | 584              | 1,533            | 5,353            | 4,703            | 4,247            | 3,409            | 2,816            | 2,178            | 1,691            | 882              |
| 1928-29 | 781              | 596              | 317              | 704              | 2,721            | 1,343            | 1,397            | 1,142            | 780              | 681              | 547              | 398              |
| 1929-30 | 434              | 370              | 159              | 924              | 1,179            | 610              | 885              | 867              | 740              | 696              | 589              | 519              |
| 1930-31 | 433              | 314              | 467              | 2,330            | 2,202            | 1,431            | 1,371            | 1,357            | 1,273            | 1,184            | 972              | 784              |
| 1931-32 | 802              | 672              | 745              | 1,383            | 1,920            | 1,535            | 873              | 639              | 492              | 555              | 686              | 874              |
| 1932-33 | 901              | 763              | 1,696            | 2,668            | 2,095            | 1,150            | 1,212            | 1,211            | 1,219            | 1,140            | 1,242            | 909              |
| 1933-34 | 960              | 875              | 1,117            | 1,834            | 1,482            | 984              | 1,039            | 963              | 983              | 980              | 793              | 646              |
| 1934-35 | 646              | 623              | 672              | 1,008            | 1,218            | 1,210            |                  |                  |                  |                  |                  |                  |

<sup>1</sup> Includes domestic flaxseed in store in public and private elevators in 41 markets and flaxseed afloat in vessels or barges in harbors of lake and seaboard ports. Does not include flaxseed in transit either by rail or water, stocks in mills, or mill elevators attached to mills, or private stocks of flaxseed intended for local use.

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TABLE 89.—*Flaxseed: Commercial stocks, 1926-27 to 1934-35—Continued*  
CANADIAN FLAXSEED IN CANADA<sup>1</sup>

| Year    | July             | Aug.             | Sept.            | Oct.             | Nov.             | Dec.             | Jan.             | Feb.             | Mar.             | Apr.             | May              | June             |
|---------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|         | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels |
| 1926-27 | 2,105            | 1,972            | 1,535            | 1,403            | 1,899            | 2,747            | 3,188            | 3,319            | 3,427            | 3,463            | 2,947            | 2,577            |
| 1927-28 | 1,770            | 1,168            | 534              | 500              | 1,327            | 1,319            | 1,528            | 1,381            | 1,328            | 1,293            | 1,080            | 932              |
| 1928-29 | 1,619            | 444              | 352              | 780              | 1,230            | 1,275            | 1,089            | 1,049            | 982              | 973              | 849              | 693              |
| 1930-31 | 471              | 434              | 449              | 1,300            | 1,904            | 2,404            | 2,134            | 2,080            | 2,104            | 2,059            | 1,756            | 1,253            |
| 1931-32 | 975              | 742              | 758              | 833              | 1,588            | 1,549            | 1,467            | 1,396            | 1,363            | 1,383            | 1,267            | 1,404            |
| 1932-33 | 1,347            | 1,280            | 1,264            | 1,362            | 1,437            | 1,581            | 1,431            | 1,482            | 1,460            | 1,358            | 1,393            | 1,088            |
| 1933-34 | 1,140            | 1,050            | 1,013            | 984              | 904              | 699              | 603              | 604              | 595              | 565              | 541              | 507              |
| 1934-35 | 474              | 450              | 469              | 503              | 627              | 576              |                  |                  |                  |                  |                  |                  |

<sup>1</sup> Includes practically all Canadian flaxseed held within Canadian boundaries, exclusive of farm and certain mill stocks.

Bureau of Agricultural Economics; compiled from weekly reports to the grain, hay, and feed market news service.

Data for domestic flaxseed in United States are for stocks on the Saturday nearest the 1st day of the month; for Canadian flaxseed in Canada data are for stocks on the Friday nearest the 1st day of the month.

TABLE 90.—*Flaxseed: Average price per bushel received by producers, United States, 1925-26 to 1934-35*

| Year    | Aug.<br>15 | Sept.<br>15 | Oct.<br>15 | Nov.<br>15 | Dec.<br>15 | Jan.<br>15 | Feb.<br>15 | Mar.<br>15 | Apr.<br>15 | May<br>15 | June<br>15 | July<br>15 | Weighted<br>average |
|---------|------------|-------------|------------|------------|------------|------------|------------|------------|------------|-----------|------------|------------|---------------------|
|         | Cents      | Cents       | Cents      | Cents      | Cents      | Cents      | Cents      | Cents      | Cents      | Cents     | Cents      | Cents      | Cents               |
| 1925-26 | 229.5      | 227.9       | 228.9      | 228.1      | 232.1      | 224.5      | 216.4      | 202.9      | 207.0      | 205.4     | 203.9      | 208.7      | 226.4               |
| 1926-27 | 215.7      | 211.3       | 197.5      | 195.5      | 196.4      | 193.0      | 195.7      | 195.1      | 196.1      | 205.7     | 204.7      | 198.4      | 203.2               |
| 1927-28 | 203.7      | 197.1       | 191.2      | 184.2      | 185.3      | 188.4      | 189.9      | 194.8      | 198.4      | 210.5     | 209.0      | 195.5      | 192.5               |
| 1928-29 | 181.7      | 181.6       | 198.1      | 198.1      | 205.4      | 211.1      | 218.4      | 219.2      | 216.4      | 214.7     | 217.0      | 233.2      | 193.9               |
| 1929-30 | 259.5      | 285.4       | 300.5      | 285.1      | 287.7      | 279.8      | 275.0      | 261.5      | 263.7      | 245.9     | 245.6      | 192.7      | 281.2               |
| 1930-31 | 191.9      | 168.1       | 152.2      | 133.6      | 137.6      | 131.7      | 126.2      | 130.4      | 128.6      | 129.9     | 120.1      | 132.6      | 161.0               |
| 1931-32 | 120.4      | 113.1       | 106.5      | 121.9      | 113.7      | 116.1      | 116.0      | 118.7      | 116.1      | 106.7     | 86.2       | 80.8       | 116.6               |
| 1932-33 | 79.3       | 88.1        | 87.7       | 87.1       | 82.8       | 80.8       | 87.1       | 88.0       | 94.8       | 118.6     | 136.3      | 188.8      | 88.1                |
| 1933-34 | 163.0      | 164.4       | 149.0      | 155.1      | 161.1      | 161.4      | 164.8      | 160.4      | 155.0      | 163.7     | 167.8      | 168.0      | 162.6               |
| 1934-35 | 176.7      | 175.2       | 167.1      | 161.7      | 163.8      |            |            |            |            |           |            |            | 172.7               |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 Yearbook, table 101. Only monthly prices are comparable.

TABLE 91.—*Flaxseed, No 1: Weighted average price per bushel of reported cash sales, Minneapolis 1925-26 to 1934-35*

| Year    | Aug.  | Sept. | Oct.  | Nov.  | Dec.  | Jan.  | Feb.  | Mar.  | Apr.  | May   | June  | July  | Weighted<br>average |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------------------|
|         | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents               |
| 1925-26 | 254   | 259   | 253   | 256   | 261   | 250   | 243   | 232   | 234   | 230   | 233   | 244   | 253                 |
| 1926-27 | 238   | 233   | 221   | 222   | 224   | 223   | 225   | 222   | 224   | 234   | 225   | 223   | 225                 |
| 1927-28 | 222   | 221   | 213   | 213   | 215   | 224   | 227   | 233   | 236   | 246   | 238   | 221   | 221                 |
| 1928-29 | 205   | 209   | 228   | 235   | 239   | 245   | 255   | 249   | 245   | 245   | 248   | 276   | 239                 |
| 1929-30 | 279   | 323   | 332   | 324   | 322   | 308   | 305   | 292   | 292   | 268   | 271   | 232   | 311                 |
| 1930-31 | 200   | 190   | 180   | 165   | 161   | 157   | 156   | 158   | 157   | 155   | 148   | 164   | 176                 |
| 1931-32 | 141   | 137   | 132   | 146   | 143   | 141   | 140   | 140   | 135   | 121   | 105   | 98    | 136                 |
| 1932-33 | 101   | 113   | 113   | 106   | 109   | 116   | 110   | 113   | 128   | 143   | 172   | 205   | 118                 |
| 1933-34 | 188   | 188   | 180   | 177   | 177   | 190   | 189   | 182   | 182   | 191   | 191   | 190   | 187                 |
| 1934-35 | 205   | 198   | 190   | 186   | 199   |       |       |       |       |       |       |       |                     |

Bureau of Agricultural Economics; computed by weighting selling price by number of car lots sold, as reported in Minneapolis Daily Market Record.

Prices 1899-1900 to 1924-25 appear in 1932 Yearbook, table 100.

TABLE 92.—*Flaxseed: International trade, average 1925-29, annual, 1930-33*

| Country                            | Calendar year      |                  |                  |                  |                  |                  |                  |                  |                   |                  |
|------------------------------------|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|------------------|
|                                    | Average<br>1925-29 |                  | 1930             |                  | 1931             |                  | 1932             |                  | 1933 <sup>1</sup> |                  |
|                                    | Exports            | Imports          | Exports          | Imports          | Exports          | Imports          | Exports          | Imports          | Exports           | Imports          |
| PRINCIPAL EXPORT-<br>ING COUNTRIES | 1,000<br>bushels   | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels  | 1,000<br>bushels |
| Argentina.....                     | 63,699             | 0                | 46,047           | 0                | 74,022           | 1                | 79,823           | 0                | 54,812            | 0                |
| British India.....                 | 9,442              | 763              | 10,455           | 736              | 4,500            | 538              | 3,088            | 574              | 13,897            | 773              |
| Canada.....                        | 2,828              | 568              | 1,397            | 809              | 1,045            | 346              | 367              | 455              | 615               | 150              |
| Uruguay.....                       | 2,084              | 0                | 3,116            | 0                | 5,236            | 0                | 3,087            | 0                | -----             | 0                |
| Lithuania.....                     | 811                | 0                | 792              | 0                | 439              | 0                | 304              | 0                | 237               | 0                |
| Latvia.....                        | 644                | 560              | 423              | 304              | 188              | 161              | 96               | 136              | 135               | 188              |
| Morocco.....                       | 363                | 0                | 318              | 0                | 671              | 0                | 533              | 0                | 104               | 0                |
| Eritrea <sup>2</sup> .....         | 188                | 0                | 37               | 0                | 19               | 0                | 53               | 0                | -----             | 0                |
| China.....                         | 117                | 0                | 23               | 0                | 170              | 0                | 388              | 0                | 545               | 0                |
| Estonia.....                       | 86                 | 31               | 99               | 3                | 7                | 1                | 2                | 8                | 1                 | 50               |
| Rumania.....                       | 56                 | 9                | 78               | 0                | 384              | 0                | 207              | 0                | -----             | 0                |
| Tunis.....                         | 47                 | 0                | 25               | 0                | 15               | 0                | 59               | 0                | 8                 | 0                |
| Total.....                         | 80,365             | 1,931            | 62,810           | 1,852            | 86,696           | 1,047            | 87,707           | 1,173            | 70,354            | 1,161            |
| PRINCIPAL IMPORT-<br>ING COUNTRIES |                    |                  |                  |                  |                  |                  |                  |                  |                   |                  |
| United States.....                 | 0                  | 20,540           | 0                | 12,682           | 0                | 14,480           | 0                | 7,919            | 0                 | 13,825           |
| Netherlands.....                   | 208                | 13,639           | 260              | 10,029           | 88               | 16,524           | 135              | 17,700           | 79                | 11,630           |
| Germany.....                       | 80                 | 13,602           | 47               | 9,274            | 25               | 13,404           | 38               | 17,572           | 51                | 14,105           |
| United Kingdom.....                | 13                 | 13,439           | 0                | 8,915            | 0                | 13,517           | 0                | 14,485           | 0                 | 9,829            |
| France.....                        | 20                 | 7,368            | 27               | 7,499            | 30               | 10,380           | 13               | 8,280            | 11                | 10,404           |
| Belgium.....                       | 301                | 4,052            | 121              | 2,980            | 366              | 6,611            | 248              | 6,557            | 122               | 4,015            |
| Italy.....                         | 1                  | 2,380            | 0                | 2,081            | 0                | 2,412            | 0                | 2,702            | 0                 | 2,954            |
| Sweden.....                        | 0                  | 1,477            | 0                | 1,425            | 0                | 1,884            | 0                | 1,708            | 0                 | 1,384            |
| Australia <sup>3</sup> .....       | 0                  | 957              | 0                | 605              | 0                | 555              | 0                | 645              | 0                 | -----            |
| Czechoslovakia.....                | 10                 | 885              | 33               | 796              | 12               | 1,041            | 6                | 1,426            | 4                 | 540              |
| Denmark.....                       | 0                  | 696              | 0                | 643              | 0                | 745              | 0                | 953              | 0                 | 762              |
| Spain.....                         | 3                  | 663              | 0                | 749              | 0                | 832              | 0                | 922              | 0                 | 642              |
| Norway.....                        | 0                  | 602              | 0                | 637              | 0                | 515              | 0                | 721              | 0                 | 735              |
| Poland.....                        | 275                | 522              | 54               | 267              | 13               | 488              | 6                | 485              | 3                 | 511              |
| Japan.....                         | 0                  | 464              | 0                | 224              | 1                | 330              | 0                | 263              | 0                 | 842              |
| Finland.....                       | 0                  | 222              | 0                | 141              | 0                | 123              | 0                | 135              | 0                 | 156              |
| Hungary.....                       | 27                 | 92               | 263              | 188              | 75               | 4                | 17               | 53               | 12                | 54               |
| Austria.....                       | 0                  | 15               | 1                | 16               | 0                | 19               | 0                | 13               | 0                 | 15               |
| Total.....                         | 925                | 81,615           | 806              | 59,151           | 610              | 83,864           | 460              | 83,749           | 282               | 73,803           |

<sup>1</sup> Preliminary.<sup>2</sup> International Yearbook of Agricultural Statistics.<sup>3</sup> Does not include Manchuria after June 30, 1932.

Bureau of Agricultural Economics; official sources except where otherwise noted.

TABLE 93.—*Flaxseed crushed and linseed oil produced, United States, 1924-25 to 1933-34*

| Year                       | Flaxseed crushed     |                   |                  |                    |                  | Oil produced         |                   |                 |                    |                 |
|----------------------------|----------------------|-------------------|------------------|--------------------|------------------|----------------------|-------------------|-----------------|--------------------|-----------------|
|                            | October-<br>December | January-<br>March | April-<br>June   | July-<br>September | Total            | October-<br>December | January-<br>March | April-<br>June  | July-<br>September | Total           |
|                            | 1,000<br>bushels     | 1,000<br>bushels  | 1,000<br>bushels | 1,000<br>bushels   | 1,000<br>bushels | 1,000<br>pounds      | 1,000<br>pounds   | 1,000<br>pounds | 1,000<br>pounds    | 1,000<br>pounds |
| 1924-25.....               | 11,530               | 12,616            | 9,128            | 7,822              | 40,996           | 211,954              | 229,544           | 169,980         | 146,306            | 757,784         |
| 1925-26.....               | 11,798               | 10,651            | 7,767            | 9,500              | 39,716           | 217,992              | 194,607           | 144,950         | 174,057            | 731,606         |
| 1926-27.....               | 11,085               | 11,037            | 8,963            | 9,051              | 40,136           | 206,496              | 202,162           | 167,232         | 169,274            | 745,164         |
| 1927-28.....               | 12,699               | 11,885            | 9,608            | 7,603              | 41,795           | 238,046              | 223,751           | 179,532         | 141,889            | 783,218         |
| 1928-29.....               | 11,191               | 10,839            | 9,962            | 10,321             | 42,313           | 206,273              | 202,353           | 187,019         | 191,977            | 737,622         |
| 1929-30.....               | 9,947                | 7,966             | 7,270            | 5,837              | 31,070           | 182,228              | 145,970           | 130,863         | 108,236            | 567,297         |
| 1930-31.....               | 7,391                | 6,571             | 7,205            | 7,610              | 28,777           | 131,257              | 118,417           | 130,635         | 141,205            | 521,514         |
| 1931-32.....               | 7,112                | 5,393             | 3,584            | 3,739              | 18,828           | 130,479              | 99,783            | 67,296          | 68,503             | 366,061         |
| 1932-33.....               | 4,968                | 4,365             | 4,268            | 6,074              | 19,705           | 90,987               | 79,596            | 79,035          | 113,413            | 363,030         |
| 1933-34 <sup>1</sup> ..... | 6,760                | 5,156             | 5,016            | 4,293              | 21,225           | 133,906              | 97,452            | 98,026          | 85,038             | 414,422         |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; compiled from reports of the Bureau of the Census, animal and vegetable fats and oils. Figures for 1919-20 to 1923-24 are in 1934 Yearbook, table 91.

TABLE 94.—*Linseed oil, raw: Average car-lot price per gallon in barrels, New York, 1925-26 to 1934-35*

| Year         | Aug.         | Sept.        | Oct.         | Nov.         | Dec.         | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | July         | Average      |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|              | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> |
| 1925-26..... | 102          | 103          | 199          | 96           | 95           | 87           | 85           | 80           | 81           | 81           | 84           | 89           | 90           |
| 1926-27..... | 90           | 83           | 81           | 81           | 80           | 79           | 78           | 77           | 81           | 84           | 84           | 80           | 82           |
| 1927-28..... | 80           | 77           | 74           | 73           | 72           | 74           | 74           | 74           | 74           | 78           | 77           | 75           | 75           |
| 1928-29..... | 73           | 74           | 76           | 77           | 75           | 75           | 76           | 76           | 76           | 77           | 79           | 92           | 77           |
| 1929-30..... | 96           | 116          | 118          | 111          | 110          | 105          | 105          | 105          | 106          | 105          | 105          | 104          | 107          |
| 1930-31..... | 97           | 78           | 74           | 70           | 68           | 66           | 69           | 71           | 63           | 66           | 64           | 68           | 72           |
| 1931-32..... | 63           | 57           | 55           | 56           | 53           | 50           | 46           | 50           | 49           | 46           | 44           | 42           | 51           |
| 1932-33..... | 41           | 45           | 47           | 50           | 52           | 55           | 54           | 56           | 58           | 65           | 70           | 81           | 56           |
| 1933-34..... | 79           | 78           | 72           | 72           | 71           | 69           | 69           | 70           | 70           | 72           | 75           | 73           | 72           |
| 1934-35..... | 74           | 70           | 68           | 65           | 66           | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----        |

<sup>1</sup> Beginning October 1925, prices are quoted on pound basis and have been converted to price per gallon by multiplying by 7.5.

Bureau of Agricultural Economics; compiled from Oil, Paint and Drug Reporter, average of weekly ranges.

Data for 1909-10 to 1924-25 are available in the 1923 Yearbook, table 105.

TABLE 95.—*Linseed oil: International trade, average 1925-29, annual 1930-33*

| Country                                    | Calendar year           |                         |                         |                         |                         |                         |                         |                         |                         |                         |
|--|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|  | Average 1925-29         |                         | 1930                    |                         | 1931                    |                         | 1932                    |                         | 1933 <sup>1</sup>       |                         |
|  | Exports                 | Imports                 | Exports                 | Imports                 | Exports                 | Imports                 | Exports                 | Imports                 | Exports                 | Imports                 |
| <b>PRINCIPAL EXPORT-<br/>ING COUNTRIES</b> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> |
| Netherlands.....                           | 158,136                 | 833                     | 172,024                 | 943                     | 161,433                 | 952                     | 126,030                 | 455                     | 105,115                 | 481                     |
| United Kingdom.....                        | 49,400                  | 47,546                  | 35,157                  | 96,051                  | 32,258                  | 33,005                  | 30,222                  | 56,965                  | 24,127                  | 16,204                  |
| Belgium.....                               | 23,503                  | 2,303                   | 29,324                  | 1,237                   | 22,743                  | 1,518                   | 34,744                  | 1,353                   | 20,765                  | 1,105                   |
| Sweden.....                                | 1,267                   | 668                     | 1,435                   | 312                     | 1,952                   | 469                     | 1,228                   | 684                     | 626                     | 220                     |
| Total.....                                 | 232,306                 | 51,350                  | 237,940                 | 98,543                  | 218,386                 | 85,944                  | 192,224                 | 59,457                  | 150,633                 | 18,010                  |
| <b>PRINCIPAL IMPORT-<br/>ING COUNTRIES</b> |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |
| Germany.....                               | 8,343                   | 43,213                  | 9,288                   | 33,931                  | 14,680                  | 15,517                  | 6,700                   | 35,301                  | 3,047                   | 25,780                  |
| Switzerland.....                           | 27                      | 13,286                  | 49                      | 12,931                  | 38                      | 19,474                  | 3                       | 19,667                  | 39                      | 17,899                  |
| Brazil.....                                | 0                       | 9,558                   | 0                       | 5,758                   | 0                       | 4,214                   | 0                       | 2,909                   | 0                       | -----                   |
| Austria.....                               | 459                     | 8,997                   | 165                     | 9,104                   | 90                      | 12,563                  | 49                      | 9,200                   | 277                     | 8,646                   |
| France.....                                | 4,378                   | 8,138                   | 11,278                  | 5,480                   | 9,608                   | 6,423                   | 9,555                   | 3,172                   | 9,592                   | 1,090                   |
| United States.....                         | 2,351                   | 7,946                   | 1,592                   | 2,125                   | 1,094                   | 235                     | 842                     | 25                      | 828                     | 11,257                  |
| Finland.....                               | 0                       | 5,380                   | 0                       | 5,843                   | 0                       | 6,648                   | 0                       | 4,889                   | 0                       | 5,102                   |
| Netherlands Indies.....                    | 0                       | 5,161                   | 0                       | 5,448                   | 0                       | 3,900                   | 0                       | 2,880                   | 0                       | 1,878                   |
| Australia.....                             | 25                      | 4,968                   | 24                      | 1,643                   | 27                      | 2,277                   | 27                      | 3,024                   | -----                   | -----                   |
| Egypt.....                                 | 3                       | 4,935                   | 0                       | 1,555                   | 2                       | 697                     | 1                       | 835                     | 0                       | 1,450                   |
| Union of South<br>Africa.....              | 0                       | 4,770                   | 0                       | 4,442                   | 0                       | 5,165                   | 0                       | 3,713                   | 0                       | 5,756                   |
| Hungary.....                               | 12                      | 4,246                   | 989                     | 1,225                   | 135                     | 823                     | 312                     | 1,162                   | 0                       | 412                     |
| New Zealand.....                           | 2                       | 3,789                   | 0                       | 2,892                   | 0                       | 3,020                   | 0                       | 2,262                   | 0                       | 2,401                   |
| Italy.....                                 | 403                     | 3,574                   | 244                     | 2,210                   | 169                     | 6,436                   | 216                     | 4,079                   | 177                     | 2,031                   |
| Norway.....                                | 54                      | 3,314                   | 64                      | 1,703                   | 86                      | 9,186                   | 120                     | 2,547                   | 222                     | 1,896                   |
| Chile.....                                 | 4                       | 2,712                   | 22                      | 2,605                   | 3                       | 1,931                   | 4                       | 357                     | -----                   | 522                     |
| Irish Free State.....                      | 0                       | 2,319                   | 0                       | 3,132                   | 0                       | 2,941                   | 0                       | 2,853                   | 0                       | -----                   |
| British India.....                         | 728                     | 2,092                   | 922                     | 1,535                   | 358                     | 1,548                   | 343                     | 1,675                   | 419                     | 1,393                   |
| Denmark.....                               | 419                     | 2,081                   | 3                       | 2,424                   | 0                       | 1,795                   | 34                      | 812                     | 39                      | 252                     |
| British Malaya.....                        | 136                     | 1,650                   | 85                      | 1,380                   | 77                      | 1,306                   | 69                      | 725                     | 57                      | 957                     |
| Bulgaria.....                              | 0                       | 1,454                   | 0                       | 1,333                   | 0                       | 1,352                   | 0                       | 958                     | 0                       | 703                     |
| Yugoslavia.....                            | 32                      | 1,590                   | 1                       | 1,028                   | 1                       | 2,177                   | 1                       | 1,045                   | 1                       | 380                     |
| Czechoslovakia.....                        | 257                     | 1,369                   | 542                     | 578                     | 106                     | 558                     | 507                     | 1,138                   | 11                      | 22                      |
| China.....                                 | 0                       | 1,242                   | 0                       | 903                     | 0                       | 1,462                   | 498                     | 1,269                   | 2                       | 1,335                   |
| Philippine Islands.....                    | 0                       | 1,210                   | 0                       | 1,621                   | 0                       | 1,322                   | 0                       | 1,690                   | 0                       | -----                   |
| Canada.....                                | 49                      | 819                     | 33                      | 1,109                   | 14                      | 1,048                   | 12                      | 806                     | 76                      | 1,604                   |
| Argentina.....                             | 265                     | 743                     | 35                      | 646                     | 36                      | 488                     | 39                      | 290                     | 49                      | 257                     |
| Tunis.....                                 | 0                       | 668                     | 0                       | 912                     | 0                       | 870                     | 0                       | 862                     | 0                       | 962                     |
| Greece.....                                | 55                      | 419                     | -----                   | 263                     | -----                   | 451                     | -----                   | 364                     | -----                   | 77                      |
| Total.....                                 | 18,012                  | 151,373                 | 25,336                  | 115,849                 | 26,524                  | 115,827                 | 18,932                  | 108,549                 | 14,836                  | 93,502                  |

<sup>1</sup> Preliminary.

<sup>2</sup> Java and Madura only.

<sup>3</sup> International Yearbook of Agricultural Statistics.

<sup>4</sup> Does not include Manchuria after June 30, 1932.

<sup>5</sup> 3-year average.

Bureau of Agricultural Economics; official sources except where otherwise noted. Conversions made on the basis of 7.5 pounds to the gallon.

TABLE 96.—*Linseed meal, 34 percent protein: Average price per ton, Minneapolis, by months, 1925-26 to 1934-35*

| Year         | Aug.        | Sept.       | Oct.        | Nov.        | Dec.        | Jan.        | Feb.        | Mar.        | Apr.        | May         | June        | July        | Average     |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|              | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> |
| 1925-26..... | 43.80       | 42.88       | 42.30       | 42.88       | 44.50       | 46.40       | 47.62       | 45.50       | 48.25       | 49.00       | 46.38       | 46.60       | 45.51       |
| 1926-27..... | 44.81       | 43.12       | 43.70       | 43.88       | 44.00       | 45.60       | 47.35       | 47.75       | 48.10       | 47.25       | 45.90       | 45.50       | 45.58       |
| 1927-28..... | 46.25       | 45.95       | 45.30       | 46.40       | 47.45       | 48.00       | 49.00       | 50.80       | 51.40       | 53.00       | 51.10       | 49.10       | 48.65       |
| 1928-29..... | 45.75       | 47.55       | 53.85       | 54.90       | 57.00       | 56.90       | 59.00       | 56.60       | 52.10       | 51.90       | 51.20       | 53.05       | 53.32       |
| 1929-30..... | 53.10       | 56.40       | 55.70       | 55.10       | 55.00       | 54.10       | 51.75       | 50.30       | 54.75       | 48.70       | 44.75       | 42.75       | 51.87       |
| 1930-31..... | 42.20       | 42.10       | 40.25       | 38.90       | 37.90       | 36.40       | 34.65       | 31.60       | 30.75       | 27.70       | 24.95       | 25.60       | 34.42       |
| 1931-32..... | 26.20       | 25.75       | 25.70       | 31.40       | 32.10       | 30.15       | 28.75       | 28.00       | 27.30       | 24.25       | 21.40       | 20.40       | 26.78       |
| 1932-33..... | 21.40       | 22.40       | 21.50       | 19.80       | 19.15       | 19.70       | 19.30       | 20.00       | 21.65       | 25.20       | 27.50       | 37.40       | 21.60       |
| 1933-34..... | 36.10       | 31.75       | 31.70       | 31.90       | 31.65       | 32.00       | 31.90       | 30.15       | 30.90       | 29.20       | 32.25       | 33.40       | 31.91       |
| 1934-35..... | 41.75       | 44.00       | 41.40       | 42.00       | 44.30       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |

<sup>1</sup> Beginning July 1933, quoted as 37 percent protein. July not included in yearly average.

Bureau of Agricultural Economics. Compiled from reports made to the Bureau. Quoted "per ton, bagged, in car lots, sight-draft basis."

TABLE 97.—*Rice, rough: Acreage, production, value, shipments, and foreign trade, United States, 1909-34*

| Year                    | Acreage harvested  | Average yield per acre | Production           | Price per bushel received by producers Dec. 1 <sup>1</sup> | Farm value, basis Dec. 1 price | Shipments from United States to Alaska, Hawaii, and Puerto Rico <sup>2</sup> | Foreign trade, mostly milled rice, but including rice bran, meal, and broken rice, reduced to rough basis, year beginning July <sup>3</sup> |                      |                           |
|-------------------------|--------------------|------------------------|----------------------|--|--------------------------------|--|---|----------------------|---------------------------|
|                         |                    |                        |                      |  |                                |  | Domestic exports  | Imports              | Net balances <sup>4</sup> |
|                         | <i>1,000 acres</i> | <i>Bushels</i>         | <i>1,000 bushels</i> | <i>Cents</i>   | <i>1,000 dollars</i>           | <i>1,000 bushels</i>   | <i>1,000 bushels</i>  | <i>1,000 bushels</i> | <i>1,000 bushels</i>      |
| 1909.....               | 610                | 33.8                   | 20,607               | 79.5   | 16,392                         | 4,276  | 964   | 8,114                | -6,857                    |
| 1910.....               | 723                | 33.9                   | 24,510               | 67.8   | 16,624                         | 4,606  | 1,082   | 7,516                | -6,211                    |
| 1911.....               | 696                | 32.9                   | 22,934               | 79.7   | 18,274                         | 4,890  | 1,420   | 6,842                | -5,047                    |
| 1912.....               | 723                | 34.7                   | 25,054               | 93.5   | 23,423                         | 4,505  | 1,401   | 7,996                | -6,139                    |
| 1913.....               | 827                | 31.1                   | 25,744               | 85.8   | 22,090                         | 5,244  | 807   | 10,447               | -9,000                    |
| 1914.....               | 694                | 34.1                   | 23,649               | 92.4   | 21,849                         | 4,640  | 2,789   | 9,979                | -5,059                    |
| 1915.....               | 803                | 36.1                   | 28,947               | 90.6   | 26,212                         | 5,191  | 4,391   | 9,516                | -2,540                    |
| 1916.....               | 869                | 47.0                   | 40,861               | 88.9   | 36,311                         | 5,818  | 6,529   | 7,778                | -349                      |
| 1917.....               | 981                | 35.4                   | 34,739               | 189.6  | 65,879                         | 4,878  | 7,069   | 16,418               | -6,026                    |
| 1918.....               | 1,119              | 34.5                   | 38,606               | 191.8  | 74,042                         | 5,995  | 6,953   | 13,094               | +1,644                    |
| 1919.....               | 1,070              | 39.9                   | 42,689               | 266.0  | 113,570                        | 5,547  | 17,402  | 6,477                | +14,401                   |
| 1920.....               | 1,299              | 39.8                   | 51,648               | 118.1  | 61,006                         | 6,614  | 15,871  | 3,455                | +14,603                   |
| 1921.....               | 990                | 39.7                   | 39,274               | 94.8   | 37,239                         | 7,179  | 19,494  | 2,650                | +18,773                   |
| 1922.....               | 1,053              | 39.6                   | 41,663               | 92.9   | 38,686                         | 8,290  | 13,344  | 2,503                | +12,018                   |
| 1923.....               | 874                | 38.0                   | 33,238               | 110.2  | 36,615                         | 9,094  | 8,199   | 1,376                | +7,322                    |
| 1924.....               | 837                | 38.9                   | 32,593               | 137.6  | 44,852                         | 8,152  | 4,033   | 2,076                | +2,535                    |
| 1925.....               | 849                | 38.6                   | 32,736               | 149.1  | 48,809                         | 8,049  | 1,734   | 4,747                | -2,514                    |
| 1926.....               | 1,006              | 41.2                   | 41,415               | 111.6  | 46,205                         | 8,743  | 10,957  | 2,558                | +8,844                    |
| 1927.....               | 1,024              | 43.4                   | 44,422               | 89.0   | 39,554                         | 9,183  | 11,152  | 1,888                | +9,562                    |
| 1928.....               | 962                | 45.1                   | 43,434               | 89.9   | 39,029                         | 10,131   | 14,137  | 1,325                | +13,272                   |
| 1929.....               | 890                | 47.2                   | 40,604               | 98.5   | 40,384                         | 10,342   | 10,423  | 1,124                | +9,458                    |
| 1930.....               | 961                | 46.7                   | 44,923               | 78.4   | 35,209                         | 10,864   | 10,116  | 1,278                | +8,965                    |
| 1931.....               | 964                | 46.5                   | 44,873               | 49.6   | 22,247                         | 10,398   | 9,890   | 737                  | +9,255                    |
| 1932.....               | 873                | 47.3                   | 41,250               | 41.9   | 17,264                         | 12,130   | 6,398   | 780                  | +5,687                    |
| 1933.....               | 792                | 46.8                   | 37,053               | 77.8   | 28,832                         | 10,450   | 3,629   | 1,434                | +2,195                    |
| 1934 <sup>5</sup> ..... | 781                | 49.0                   | 38,296               | 77.5   | 29,662                         | -----  | -----   | -----                | -----                     |

<sup>1</sup> From 1924-33, prices are average prices for the crop-marketing season.

<sup>2</sup> Year beginning July.

<sup>3</sup> Compiled from Commerce and Navigation of the United States, 1909-17; Foreign Commerce and Navigation of the United States, 1918; Monthly Summary of Foreign Commerce of the United States, June issues, 1919-26; January and June issues, 1927-34, and official records of the Bureau of Foreign and Domestic Commerce.

<sup>4</sup> The difference between the total exports (domestic exports plus reexports) and total imports. Beginning 1933-34 domestic exports and imports for consumption. See introductory text. Net exports indicated by +; net imports indicated by -.

<sup>5</sup> Preliminary.

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Production figures are estimates of the Crop Reporting Board, revised 1919-28. See introductory text. See 1927 Yearbook, table 102, for data for earlier years.

TABLE 98.—*Rice, rough: Acreage, yield, production, and average price per bushel received by producers, by States, averages, and annual 1933 and 1934*

| State              | Acreage harvested |             |                   | Yield per acre   |         |                   | Production       |               |                   | Price for crop of— |                   |
|--------------------|-------------------|-------------|-------------------|------------------|---------|-------------------|------------------|---------------|-------------------|--------------------|-------------------|
|                    | Average, 1927-31  | 1933        | 1934 <sup>1</sup> | Average, 1922-31 | 1933    | 1934 <sup>1</sup> | Average, 1927-31 | 1933          | 1934 <sup>1</sup> | 1933               | 1934 <sup>2</sup> |
|                    | 1,000 acres       | 1,000 acres | 1,000 acres       | Bushels          | Bushels | Bushels           | 1,000 bushels    | 1,000 bushels | 1,000 bushels     | Cents              | Cents             |
| Arkansas.....      | 172               | 147         | 138               | 47.1             | 43.0    | 51.0              | 8,379            | 7,056         | 6,936             | 80                 | 76                |
| Louisiana.....     | 486               | 394         | 394               | 36.1             | 40.5    | 40.5              | 18,537           | 15,957        | 13,957            | 78                 | 79                |
| Texas.....         | 172               | 145         | 146               | 45.3             | 53.0    | 53.0              | 8,913            | 7,685         | 7,733             | 81                 | 79                |
| California.....    | 124               | 106         | 105               | 57.5             | 60.0    | 73.0              | 7,823            | 6,360         | 7,665             | 71                 | 74                |
| United States..... | 954               | 792         | 781               | 42.5             | 46.8    | 49.0              | 43,651           | 37,058        | 38,296            | 77.8               | 77.5              |

<sup>1</sup> Preliminary.<sup>2</sup> Dec. 1 price.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 99.—*Rice, in terms of cleaned rice: Production, world and selected countries, 1909-10 to 1934-35*

| Crop year                  | Estimated world, exclusive of China | Production in selected countries <sup>1</sup> |                |                |                |                |                              |                   |                |                |
|----------------------------|-------------------------------------|---|----------------|----------------|----------------|----------------|------------------------------|-------------------|----------------|----------------|
|                            |                                     | India   | Japan          | Chosen         | Taiwan         | Indo-China     | Java and Madura <sup>2</sup> | Siam <sup>3</sup> | Philippines    | United States  |
|                            | Million pounds                      | Million pounds                                | Million pounds | Million pounds | Million pounds | Million pounds | Million pounds               | Million pounds    | Million pounds | Million pounds |
| 1909-10.....               | 107,000                             | 63,889  | 16,474         | 2,343          | 1,455          | -----          | 5,723                        | 3,734             | 1,164          | 572            |
| 1910-11.....               | 106,000                             | 64,552  | 16,650         | 3,269          | 1,316          | -----          | 5,738                        | 3,466             | 1,267          | 681            |
| 1911-12.....               | 108,000                             | 63,943  | 16,246         | 3,634          | 1,410          | -----          | 6,170                        | 4,533             | 1,717          | 637            |
| 1912-13.....               | 109,000                             | 63,802  | 15,778         | 3,413          | 1,271          | 6,614          | 5,842                        | 4,561             | 1,512          | 696            |
| 1913-14.....               | 113,000                             | 64,555  | 15,789         | 3,804          | 1,610          | 8,051          | 6,440                        | 4,994             | 1,404          | 715            |
| 1914-15.....               | 113,000                             | 61,109  | 17,909         | 4,439          | 1,448          | 9,521          | 6,339                        | 4,708             | 1,100          | 657            |
| 1915-16.....               | 124,000                             | 73,315  | 17,569         | 4,036          | 1,504          | 7,921          | 6,451                        | 4,786             | 1,289          | 804            |
| 1916-17.....               | 128,000                             | 78,521  | 18,363         | 4,377          | 1,461          | 6,733          | 6,409                        | 5,011             | 1,745          | 1,135          |
| 1917-18.....               | 132,000                             | 80,559  | 17,143         | 4,261          | 1,519          | 6,313          | 7,204                        | 5,133             | 2,210          | 965            |
| 1918-19.....               | 108,000                             | 54,466  | 17,184         | 4,765          | 1,455          | 6,302          | 7,272                        | 4,642             | 2,085          | 1,072          |
| 1919-20.....               | 123,000                             | 71,734  | 19,107         | 3,974          | 1,547          | 6,532          | 7,936                        | 3,114             | 2,243          | 1,186          |
| 1920-21.....               | 117,000                             | 61,949  | 19,857         | 4,639          | 1,521          | 6,283          | 6,761                        | 5,803             | 2,560          | 1,435          |
| 1921-22.....               | 127,000                             | 74,240  | 19,835         | 4,500          | 1,563          | 7,931          | 5,984                        | 5,806             | 2,081          | 1,091          |
| 1922-23.....               | 133,000                             | 75,495  | 19,067         | 4,717          | 1,711          | 7,629          | 7,280                        | 5,954             | 2,703          | 1,157          |
| 1923-24.....               | 118,000                             | 63,164  | 17,418         | 4,767          | 1,629          | 7,206          | 7,284                        | 6,034             | 2,566          | 923            |
| 1924-25.....               | 127,000                             | 69,601  | 17,960         | 4,153          | 1,909          | 7,301          | 7,563                        | 6,779             | 2,818          | 905            |
| 1925-26.....               | 126,000                             | 68,851  | 18,755         | 4,841          | 2,024          | 7,951          | 7,184                        | 6,752             | 2,949          | 909            |
| 1926-27.....               | 127,000                             | 68,433  | 17,465         | 4,807          | 1,952          | 8,255          | 7,732                        | 7,160             | 3,083          | 1,150          |
| 1927-28.....               | 127,000                             | 63,244  | 19,510         | 5,435          | 2,167          | 8,350          | 7,942                        | 6,261             | 3,082          | 1,204          |
| 1928-29.....               | 131,000                             | 72,005  | 18,945         | 4,245          | 2,135          | 7,822          | 7,679                        | 5,325             | 3,073          | 1,208          |
| 1929-30.....               | 127,000                             | 69,736  | 18,710         | 4,304          | 2,036          | 8,081          | 7,453                        | 5,315             | 3,184          | 1,243          |
| 1930-31.....               | 137,000                             | 72,124  | 21,009         | 6,026          | 2,315          | 8,138          | 8,053                        | 6,620             | 3,064          | 1,248          |
| 1931-32.....               | 131,000                             | 73,922  | 17,346         | 4,987          | 2,350          | 7,641          | 7,732                        | 5,581             | 2,930          | 1,246          |
| 1932-33.....               | 132,000                             | 69,639  | 18,972         | 5,135          | 2,811          | 7,913          | 8,187                        | 7,018             | -----          | 1,146          |
| 1933-34.....               | 134,000                             | 67,991  | 22,251         | 5,866          | 2,628          | 8,302          | 8,036                        | 6,869             | -----          | 1,029          |
| 1934-35 <sup>4</sup> ..... | -----                               | -----   | 15,942         | 5,201          | 2,839          | -----          | -----                        | -----             | -----          | 1,064          |

<sup>1</sup> China is an important producing country, but official statistics are not available. The Shanghai office of the Bureau of Agricultural Economics made the following estimates of production in China: 1931, 38,530,000 short tons; 1932, 43,950,000 short tons; 1933, 46,940,000 short tons; and 1934, 38,640,000 short tons.

<sup>2</sup> Estimates of the production of rice on nonirrigated land are not available prior to 1917-18. Estimates for the years 1909-10 to 1916-17 as given here are for the production on irrigated land. Estimates for the years 1917-18 to 1934-35 are for the total production.

<sup>3</sup> Estimated figures obtained by multiplying acreage under rice as classified for revenue purposes up to 1912-13, and acreage as reported by the Department of Land and Agriculture from 1912-13 on by an average yield for the years 1920-21 to 1923-24, for which years official estimates have been published of acreage, yield, and total production.

<sup>4</sup> Preliminary.

Bureau of Agricultural Economics.

Both acreage and production figures refer to the year of harvest. Harvests of the Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow; thus, for 1933-34 the crop harvested in the Northern Hemisphere countries in 1933 is combined with the Southern Hemisphere harvest which begins late in 1933 and ends early in 1934. Estimates of world rice production for the period 1900-01 to 1908-09 appear in 1924 Yearbook, table 138.

TABLE 100.—*Rice: Acreage and production in specified countries, average 1921-22 to 1925-26, annual 1932-33 to 1934-35*

| Country                                    | Acreage                     |                    |                    |                      | Production, in terms of cleaned rice |                       |                       |                       |
|--|-----------------------------|--------------------|--------------------|----------------------|--------------------------------------|-----------------------|-----------------------|-----------------------|
|  | Average, 1921-22 to 1925-26 | 1932-33            | 1933-34            | 1934-35 <sup>1</sup> | Average, 1921-22 to 1925-26          | 1932-33               | 1933-34               | 1934-35 <sup>1</sup>  |
| <b>NORTHERN HEMISPHERE</b>                 | <i>1,000 acres</i>          | <i>1,000 acres</i> | <i>1,000 acres</i> | <i>1,000 acres</i>   | <i>Million pounds</i>                | <i>Million pounds</i> | <i>Million pounds</i> | <i>Million pounds</i> |
| United States.....                         | 921                         | 873                | 792                | 781                  | 987                                  | 1,146                 | 1,029                 | 1,064                 |
| Mexico.....                                | <sup>2</sup> 95             | 83                 | 81                 | —                    | <sup>3</sup> 77                      | 99                    | 91                    | —                     |
| Central and South America:                 |                             |                    |                    |                      |                                      |                       |                       |                       |
| Salvador.....                              | <sup>4</sup> 13             | —                  | —                  | —                    | <sup>5</sup> 17                      | —                     | —                     | —                     |
| Colombia.....                              | <sup>6</sup> 42             | —                  | —                  | —                    | <sup>7</sup> 21                      | —                     | —                     | —                     |
| British Guiana.....                        | 45                          | 88                 | —                  | —                    | 53                                   | 114                   | —                     | —                     |
| Dutch Guiana.....                          | —                           | 27                 | —                  | —                    | 14                                   | 34                    | —                     | —                     |
| Europe:                                    |                             |                    |                    |                      |                                      |                       |                       |                       |
| Spain.....                                 | 115                         | 123                | 116                | —                    | 376                                  | 433                   | 402                   | —                     |
| Portugal.....                              | 18                          | 28                 | —                  | —                    | 22                                   | 35                    | —                     | —                     |
| Italy.....                                 | 316                         | 335                | 316                | 323                  | 729                                  | 894                   | 827                   | 840                   |
| Yugoslavia.....                            | 4                           | 5                  | —                  | —                    | 3                                    | 4                     | —                     | —                     |
| Bulgaria.....                              | 11                          | 19                 | 17                 | 15                   | 14                                   | 22                    | 19                    | 19                    |
| French West Africa:                        |                             |                    |                    |                      |                                      |                       |                       |                       |
| French Guinea.....                         | <sup>8</sup> 2,008          | 49                 | —                  | —                    | <sup>9</sup> 1,106                   | 204                   | —                     | —                     |
| French Senegal.....                        | 119                         | 124                | —                  | —                    | 65                                   | 69                    | —                     | —                     |
| Upper Volta.....                           | <sup>10</sup> 44            | 18                 | —                  | —                    | <sup>11</sup> 6                      | —                     | —                     | —                     |
| Sudan.....                                 | <sup>12</sup> 79            | 187                | —                  | —                    | <sup>13</sup> 61                     | 110                   | —                     | —                     |
| Sierra Leone.....                          | 390                         | 297                | —                  | —                    | 311                                  | 373                   | —                     | —                     |
| Egypt.....                                 | 192                         | 489                | 438                | 395                  | 320                                  | 808                   | 727                   | 691                   |
| Asia:                                      |                             |                    |                    |                      |                                      |                       |                       |                       |
| India.....                                 | 81,400                      | 82,518             | 81,877             | —                    | 70,270                               | 69,639                | 67,991                | —                     |
| Turkey.....                                | <sup>14</sup> 66            | 65                 | 51                 | 74                   | —                                    | 66                    | 59                    | 78                    |
| British North Borneo.....                  | 62                          | 73                 | —                  | —                    | 43                                   | —                     | —                     | —                     |
| French establishments in India.....        | 45                          | 47                 | —                  | —                    | 29                                   | 37                    | —                     | —                     |
| Japanese Empire:                           |                             |                    |                    |                      |                                      |                       |                       |                       |
| Japan.....                                 | 7,705                       | 7,983              | 7,778              | 7,794                | 18,107                               | 18,972                | 22,251                | 15,942                |
| Chosen.....                                | 3,824                       | 4,027              | 4,160              | 3,938                | 4,556                                | 5,135                 | 5,866                 | 5,201                 |
| Taiwan.....                                | 1,262                       | 1,642              | 1,668              | 1,648                | 1,747                                | 2,811                 | 2,627                 | 2,889                 |
| Kwantung.....                              | 3                           | 2                  | —                  | —                    | 3                                    | 3                     | —                     | —                     |
| French Indo-China.....                     | 12,005                      | 13,642             | —                  | —                    | 7,704                                | 7,913                 | 8,302                 | —                     |
| Siam.....                                  | 5,964                       | 7,441              | 7,448              | —                    | 6,065                                | 7,018                 | 6,869                 | —                     |
| Federated Malay States.....                | 186                         | —                  | —                  | —                    | 127                                  | —                     | —                     | —                     |
| Unfederated Malay States.....              | 413                         | —                  | —                  | —                    | 300                                  | —                     | —                     | —                     |
| Straits Settlements.....                   | 71                          | 71                 | —                  | —                    | 75                                   | 78                    | —                     | —                     |
| Philippine Islands.....                    | 4,229                       | —                  | —                  | —                    | 2,744                                | —                     | —                     | —                     |
| Ceylon.....                                | 799                         | 840                | —                  | —                    | 471                                  | —                     | —                     | —                     |
| <b>SOUTHERN HEMISPHERE</b>                 |                             |                    |                    |                      |                                      |                       |                       |                       |
| Brazil.....                                | <sup>15</sup> 1,029         | —                  | —                  | —                    | <sup>16</sup> 1,029                  | —                     | —                     | —                     |
| Argentina.....                             | 16                          | 29                 | 47                 | —                    | 19                                   | 32                    | 46                    | —                     |
| Australia.....                             | ( <sup>17</sup> )           | 23                 | —                  | —                    | ( <sup>18</sup> )                    | 53                    | —                     | —                     |
| Madagascar.....                            | <sup>19</sup> 1,298         | 1,346              | 1,404              | —                    | <sup>20</sup> 1,322                  | 923                   | —                     | —                     |
| Java and Madura.....                       | 8,014                       | 9,118              | 9,269              | —                    | 7,055                                | 8,187                 | 8,036                 | —                     |
| Estimated world total excluding China..... | —                           | —                  | —                  | —                    | 126,000                              | 132,600               | 134,000               | —                     |

<sup>1</sup> Preliminary.<sup>2</sup> 3-year average.<sup>3</sup> 2-year average.<sup>4</sup> 1 year only.<sup>5</sup> 4-year average.<sup>6</sup> Less than 500 acres.<sup>7</sup> Less than 500,000 pounds.

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Both acreage and production figures refer to the year of harvest. Harvests of the Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow; thus, for 1932-33 the crop harvested in the Northern Hemisphere countries in 1932 is combined with the Southern Hemisphere harvest which begins late in 1932 and ends early in 1933.

China is an important producing country, but official statistics are not available. The Shanghai office of the Bureau of Agricultural Economics made the following estimates of production in China: 1931, 38,590,000 short tons; 1932, 42,950,000 short tons; 1933, 46,940,000 short tons; and 1934, 38,640,000 short tons.

TABLE 101.—*Rice, rough: Receipts at mills in Texas, Louisiana, Arkansas, and Tennessee, by months, 1923-24 to 1934-35*

| Year         | Aug.          | Sept.         | Oct.          | Nov.          | Dec.          | Jan.          | Feb.          | Mar.          | Apr.          | May           | June          | July          | Total         |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|              | 1,000<br>bbl. | 1,000<br>bbl. | 1,000<br>bbl. | 1,000<br>bbl. | 1,000<br>bbl. | 1,000<br>bbl. | 1,000<br>bbl. | 1,000<br>bbl. | 1,000<br>bbl. | 1,000<br>bbl. | 1,000<br>bbl. | 1,000<br>bbl. | 1,000<br>bbl. |
| 1923-24..... | 177           | 394           | 1,512         | 1,911         | 966           | 1,076         | 580           | 370           | 80            | 14            | 9             | 8             | 7,065         |
| 1924-25..... | 298           | 949           | 2,182         | 1,905         | 973           | 448           | 197           | 43            | 34            | 11            | 45            | 8             | 7,093         |
| 1925-26..... | 457           | 853           | 925           | 1,131         | 1,672         | 1,019         | 477           | 210           | 194           | 119           | 106           | 74            | 7,237         |
| 1926-27..... | 188           | 1,147         | 1,681         | 1,253         | 1,053         | 818           | 648           | 621           | 372           | 396           | 430           | 147           | 8,754         |
| 1927-28..... | 530           | 1,167         | 1,719         | 1,266         | 831           | 853           | 805           | 942           | 620           | 352           | 130           | 17            | 9,232         |
| 1928-29..... | 180           | 1,197         | 2,113         | 1,936         | 947           | 621           | 592           | 439           | 429           | 232           | 191           | 126           | 9,003         |
| 1929-30..... | 584           | 1,388         | 2,330         | 1,416         | 797           | 870           | 961           | 284           | 146           | 172           | 48            | 21            | 9,017         |
| 1930-31..... | 481           | 1,005         | 2,063         | 1,246         | 867           | 1,147         | 864           | 601           | 566           | 520           | 323           | 172           | 9,855         |
| 1931-32..... | 228           | 1,442         | 1,810         | 1,408         | 632           | 569           | 734           | 813           | 599           | 702           | 328           | 218           | 9,453         |
| 1932-33..... | 266           | 862           | 1,606         | 1,189         | 724           | 687           | 747           | 821           | 1,032         | 628           | 257           | 112           | 8,931         |
| 1933-34..... | 171           | 1,067         | 2,095         | 1,100         | 426           | 721           | 932           | 496           | 191           | 91            | 183           | 153           | 7,626         |
| 1934-35..... | 244           | 836           | 1,974         | 910           | 612           | -----         | -----         | -----         | -----         | -----         | -----         | -----         | -----         |

Bureau of Agricultural Economics. Computed from monthly reports of the Rice Millers' Association and from reports of nonassociation mills. A barrel is equivalent to 162 pounds of rough rice.

TABLE 102.—*Rice: Consumption in the United States and possessions, United States exports and sales, 1918-19 to 1933-34*

| Year<br>beginning<br>August | Consumption in the United States and possessions |               |                       |               |                       |               |                       |               |                       |                       |                          |   | Total<br>sales<br>United<br>States<br>rice <sup>1</sup> |
|-----------------------------|--|---------------|-----------------------|---------------|-----------------------|---------------|-----------------------|---------------|-----------------------|-----------------------|--------------------------|---|---|
|                             | Foreign and United States rice                   |               |                       |               |                       |               |                       |               |                       |                       |                          |   |   |
|                             | United<br>States                                 |               | Puerto Rico           |               | Hawaii <sup>1</sup>   |               | Alaska                |               | Total                 | For-<br>eign<br>rice  | United<br>States<br>rice | United<br>States<br>ex-<br>ports <sup>2</sup> |   |
|                             | Total  | Per<br>capita | Total                 | Per<br>capita | Total                 | Per<br>capita | Total                 | Per<br>capita |                       |                       |                          |   |   |
|                             | 1,000<br>pock-<br>ets                            | Lb.           | 1,000<br>pock-<br>ets | Lb.           | 1,000<br>pock-<br>ets | Lb.           | 1,000<br>pock-<br>ets | Lb.           | 1,000<br>pock-<br>ets | 1,000<br>pock-<br>ets | 1,000<br>pock-<br>ets    | 1,000<br>pock-<br>ets                         | 1,000<br>pock-<br>ets                                   |
| 1918-19                     | 5,829  | 5.7           | 1,669                 | 114.8         | 433                   | 181.2         | 18                    | -----         | 7,947                 | 438                   | 7,509                    | 2,191   | 9,700   |
| 1919-20                     | 3,632  | 3.4           | 1,405                 | 98.6          | 438                   | 175.0         | 14                    | -----         | 5,489                 | 691                   | 4,798                    | 4,745   | 9,543   |
| 1920-21                     | 5,565  | 5.2           | 1,648                 | 113.7         | 521                   | 199.2         | 8                     | -----         | 7,742                 | 476                   | 7,266                    | 4,863   | 12,129  |
| 1921-22                     | 4,890  | 4.5           | 1,643                 | 113.3         | 472                   | 173.0         | 11                    | 19.8          | 7,016                 | 198                   | 6,818                    | 4,740   | 11,558  |
| 1922-23                     | 5,848  | 5.3           | 1,702                 | 117.4         | 562                   | 198.0         | 14                    | -----         | 8,126                 | 315                   | 7,811                    | 3,249   | 11,060  |
| 1923-24                     | 5,890  | 5.3           | 1,824                 | 123.3         | 608                   | 205.9         | 13                    | -----         | 8,335                 | 354                   | 7,981                    | 1,564   | 9,545   |
| 1924-25                     | 6,192  | 5.5           | 1,778                 | 118.6         | 659                   | 215.0         | 12                    | -----         | 8,641                 | 435                   | 8,206                    | 744   | 8,950   |
| 1925-26                     | 6,060  | 5.3           | 1,860                 | 124.0         | 658                   | 207.1         | 13                    | -----         | 8,591                 | 909                   | 7,682                    | 285   | 7,967   |
| 1926-27                     | 6,671  | 5.7           | 1,838                 | 122.2         | 696                   | 211.6         | 11                    | -----         | 9,211                 | 464                   | 8,747                    | 2,381   | 11,128  |
| 1927-28                     | 7,370  | 6.2           | 1,932                 | 132.9         | 704                   | 206.9         | 13                    | -----         | 10,019                | 327                   | 9,692                    | 2,390   | 12,082  |
| 1928-29                     | 7,017  | 5.8           | 2,084                 | 141.5         | 814                   | 231.6         | 13                    | -----         | 9,928                 | 237                   | 9,691                    | 3,196   | 12,887  |
| 1929-30                     | 6,495  | 5.3           | 1,941                 | 125.7         | 832                   | 229.4         | 13                    | 21.9          | 9,281                 | 271                   | 9,010                    | 2,250   | 11,260  |
| 1930-31                     | 7,147  | 5.8           | 2,077                 | 134.5         | 892                   | 173.0         | 11                    | 16.0          | 10,127                | 274                   | 9,853                    | 2,217   | 12,070  |
| 1931-32                     | 6,619  | 5.4           | 2,012                 | 130.3         | 913                   | 247.9         | 10                    | 16.9          | 9,554                 | 120                   | 9,434                    | 2,246   | 11,090  |
| 1932-33                     | 7,621  | 6.1           | 2,249                 | 145.7         | 879                   | 238.6         | 11                    | 18.6          | 10,760                | 109                   | 10,651                   | 1,275   | 11,926  |
| 1933-34                     | 5,531  | 4.5           | 2,150                 | 139.3         | 867                   | 235.4         | 10                    | 17.6          | 8,558                 | 81                    | 8,478                    | 862   | 9,340   |

<sup>1</sup> Hawaiian production not included.

<sup>2</sup> Reports of Bureau of Foreign and Domestic Commerce.

Bureau of Agricultural Economics; compiled from annual reports of the Rice Millers' Association, New Orleans. A pocket of milled rice weighs 100 pounds.



TABLE 103.—*Rice, Blue Rose, clean Fancy: Wholesale price per pound, New Orleans, by months, 1924-25 to 1934-35*

| Year    | Aug.         | Sept.        | Oct.         | Nov.         | Dec.         | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | July         | Average      |
|---------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|         | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> |
| 1924-25 | 6.62         | 6.33         | 5.83         | 6.40         | 6.56         | 6.85         | 6.88         | 6.75         | 6.69         | 7.12         | 7.38         | 7.50         | 6.75         |
| 1925-26 | 7.12         | 6.62         | 6.62         | 7.12         | 7.19         | 7.38         | 7.05         | 7.00         | 6.88         | 7.00         | 6.88         | 6.88         | 6.98         |
| 1926-27 | 6.75         | 6.00         | 6.62         | 5.12         | 5.00         | 4.88         | 4.88         | 4.81         | 4.62         | 4.88         | 5.05         | 4.62         | 5.19         |
| 1927-28 | 4.62         | 4.62         | 4.25         | 3.88         | 4.00         | 4.00         | 3.81         | 3.75         | 4.00         | 4.38         | 4.50         | 4.25         | 4.17         |
| 1928-29 | 4.25         | 4.25         | 4.00         | 4.12         | 4.12         | 4.05         | 4.00         | 4.00         | 4.00         | 4.00         | 4.00         | 4.12         | 4.07         |
| 1929-30 | 4.50         | 4.25         | 4.25         | 4.00         | 3.94         | 4.25         | 4.38         | 4.50         | 4.38         | 4.62         | 4.50         | 4.50         | 4.34         |
| 1930-31 | 4.50         | 4.12         | 3.88         | 3.62         | 3.62         | 3.50         | 3.62         | 3.50         | 3.50         | 3.50         | 3.38         | 3.38         | 3.68         |
| 1931-32 | 3.25         | 3.12         | 2.88         | 2.94         | 2.94         | 2.94         | 2.66         | 2.47         | 2.28         | 2.12         | 2.21         | 2.00         | 2.64         |
| 1932-33 | 2.08         | 2.26         | 2.14         | 2.01         | 1.94         | 1.89         | 1.81         | 1.96         | 2.09         | 2.65         | 2.79         | 2.89         | 2.21         |
| 1933-34 | 3.18         | 3.45         | 3.75         | 3.80         | 3.87         | 3.90         | 3.90         | 3.90         | 3.90         | 3.90         | 3.90         | 3.88         | 3.78         |
| 1934-35 | 3.74         | 3.70         | 3.68         | 3.55         | 3.57         |              |              |              |              |              |              |              |              |

<sup>1</sup> Average for 11 months.

Bureau of Agricultural Economics. Compiled as follows: 1924-25 to 1930-31 from annual reports of the New Orleans Board of Trade. (Highest quotations represent Fancy grade.) Beginning 1931-32, from rice market reports received weekly by the Bureau.

TABLE 104.—*Rice, including flour, meal, and broken rice: International trade, average 1925-29, annual 1930-33*

| Country                              | Calendar year         |                       |                       |                       |                       |                       |                       |                       |                       |                       |
|--------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
|                                      | Average 1925-29       |                       | 1930                  |                       | 1931                  |                       | 1932                  |                       | 1933 <sup>1</sup>     |                       |
|                                      | Exports               | Imports               | Exports               | Imports               | Exports               | Imports               | Exports               | Imports               | Exports               | Imports               |
| <b>PRINCIPAL EXPORTING COUNTRIES</b> | <i>Million pounds</i> | <i>Million pounds</i> | <i>Million pounds</i> | <i>Million pounds</i> | <i>Million pounds</i> | <i>Million pounds</i> | <i>Million pounds</i> | <i>Million pounds</i> | <i>Million pounds</i> | <i>Million pounds</i> |
| British India                        | 4,888                 | 224                   | 5,862                 | 160                   | 4,840                 | 199                   | 4,794                 | 267                   | 4,174                 | 224                   |
| Indo-China                           | 3,493                 | 0                     | 2,464                 | 0                     | 2,099                 | 0                     | 2,609                 | 1                     | 2,682                 |                       |
| Siam <sup>2</sup>                    | 3,101                 | 1                     | 2,281                 | 0                     | 2,960                 | 0                     | 3,709                 | 0                     |                       | 0                     |
| Italy                                | 329                   | 3                     | 468                   | 13                    | 331                   | 5                     | 335                   | 6                     | 397                   | 11                    |
| United States                        | 252                   | 60                    | 259                   | 28                    | 274                   | 31                    | 287                   | 19                    | 127                   | 29                    |
| Spain                                | 115                   | 0                     | 125                   | 0                     | 83                    | 0                     | 87                    | 0                     | 19                    | 0                     |
| Egypt                                | 103                   | 58                    | 112                   | 26                    | 63                    | 55                    | 91                    | 39                    | 194                   | 1                     |
| Madagascar                           | 41                    | 0                     | 14                    | 0                     | 13                    | 0                     | 11                    | 0                     | 4                     | 8                     |
| Brazil                               | 14                    | 36                    | 85                    | 2                     | 199                   | 0                     | 62                    | 0                     | 52                    | 0                     |
| Total                                | 12,436                | 383                   | 11,670                | 229                   | 10,862                | 290                   | 11,955                | 332                   | 7,649                 | 273                   |
| <b>PRINCIPAL IMPORTING COUNTRIES</b> |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |
| China                                | 6                     | 2,024                 | 4                     | 2,652                 | 4                     | 1,432                 | 4                     | 2,942                 | 14                    | 2,786                 |
| British Malaya                       | 623                   | 1,960                 | 490                   | 2,106                 | 412                   | 1,817                 | 425                   | 1,574                 | 371                   | 1,685                 |
| Netherlands Indies                   | 51                    | 1,303                 | 27                    | 1,383                 | 38                    | 1,342                 | 54                    | 934                   | 21                    | 834                   |
| Ceylon                               | 0                     | 1,045                 | 0                     | 1,063                 | 0                     | 1,002                 | 0                     | 1,036                 | 0                     | 1,010                 |
| Japan                                | 14                    | 961                   | 97                    | 397                   | 326                   | 277                   | 67                    | 337                   | 26                    | 314                   |
| Germany                              | 325                   | 845                   | 159                   | 550                   | 137                   | 896                   | 105                   | 845                   | 82                    | 675                   |
| France                               | 169                   | 532                   | 190                   | 534                   | 94                    | 646                   | 86                    | 802                   | 77                    | 1,225                 |
| Cuba                                 | 0                     | 461                   | 0                     | 443                   | 0                     | 339                   | 0                     | 312                   | 0                     |                       |
| Netherlands                          | 224                   | 272                   | 216                   | 242                   | 258                   | 333                   | 189                   | 180                   | 135                   | 238                   |
| United Kingdom                       | 16                    | 269                   | 14                    | 254                   | 11                    | 287                   | 8                     | 267                   | 3                     | 226                   |
| Philippine Islands                   | 1                     | 747                   | 1                     | 24                    | 2                     | 27                    | 1                     | 29                    | 0                     |                       |
| Argentina                            | 0                     | 139                   | 0                     | 159                   | 0                     | 116                   | 0                     | 74                    | 0                     | 92                    |
| Union of Soviet Socialist Republics  | 0                     | 126                   | 1                     | 92                    | 2                     | 77                    | 2                     | 108                   | 4                     | 2                     |
| Mauritius                            | 0                     | 129                   | 0                     | 114                   | 0                     | 140                   | 0                     | 126                   | 0                     |                       |
| Czechoslovakia                       | 0                     | 112                   | 0                     | 98                    | 0                     | 113                   | 0                     | 110                   | 0                     | 129                   |
| Belgium                              | 4                     | 91                    | 1                     | 105                   | 20                    | 135                   | 21                    | 121                   | 8                     | 124                   |
| Total                                | 1,433                 | 10,422                | 1,200                 | 10,218                | 1,304                 | 8,949                 | 963                   | 9,800                 | 741                   | 8,043                 |

<sup>1</sup> Preliminary.

<sup>2</sup> International Yearbook of Agricultural Statistics.

<sup>3</sup> Year ended Mar. 31 of following year.

<sup>4</sup> Does not include Manchuria after June 30, 1932.

<sup>5</sup> Java and Madura only.

Bureau of Agricultural Economics: official sources except where otherwise noted.  
Mostly milled rice. Under rice is included paddy, unhulled, rough, milled, polished, broken, and cargo rice, in addition to rice flour and meal. Rice bran is not included. Rough rice, or paddy, where specifically reported has been reduced to terms of milled rice at the ratio of 162 pounds of rough or unhulled to 100 pounds of milled. "Rice, other than whole or cleaned rice", in the returns of the United Kingdom is not considered paddy, since the chief sources of supply indicate that it is practically all hulled rice. Cargo rice, a mixture of hulled and unhulled, is included without being reduced to terms of milled. Broken rice and rice flour and meal, are taken without being reduced to terms of whole milled rice.

TABLE 105.—*Buckwheat: Acreage, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934*

| State and division  | Acreage harvested |             |                   | Yield per acre   |         |                   | Production       |               |                   | Price for crop of— |                   |
|---------------------|-------------------|-------------|-------------------|------------------|---------|-------------------|------------------|---------------|-------------------|--------------------|-------------------|
|                     | Average, 1927-31  | 1933        | 1934 <sup>1</sup> | Average, 1922-31 | 1933    | 1934 <sup>1</sup> | Average, 1927-31 | 1933          | 1934 <sup>1</sup> | 1933               | 1934 <sup>1</sup> |
|                     | 1,000 acres       | 1,000 acres | 1,000 acres       | Bushels          | Bushels | Bushels           | 1,000 bushels    | 1,000 bushels | 1,000 bushels     | Cents              | Cents             |
| Maine.....          | 11                | 16          | 12                | 19.6             | 20.0    | 21.0              | 200              | 320           | 252               | 65                 | 71                |
| Vermont.....        | 2                 | 2           | 2                 | 21.0             | 21.0    | 22.0              | 42               | 42            | 44                | 64                 | 71                |
| New York.....       | 174               | 139         | 147               | 17.2             | 19.0    | 19.8              | 2,859            | 2,641         | 2,911             | 54                 | 56                |
| New Jersey.....     | 1                 | 1           | 2                 | 19.8             | 15.0    | 23.0              | 20               | 15            | 46                | 68                 | 71                |
| Pennsylvania.....   | 176               | 141         | 138               | 17.8             | 19.0    | 22.5              | 3,002            | 2,679         | 3,105             | 54                 | 55                |
| North Atlantic..... | 364               | 299         | 301               | 17.6             | 19.1    | 21.1              | 6,123            | 5,697         | 6,358             | 54.7               | 56.3              |
| Ohio.....           | 26                | 24          | 22                | 17.7             | 15.5    | 19.5              | 451              | 372           | 429               | 59                 | 60                |
| Indiana.....        | 14                | 17          | 19                | 13.6             | 13.0    | 15.0              | 199              | 221           | 285               | 55                 | 64                |
| Illinois.....       | 5                 | 6           | 18                | 13.7             | 12.5    | 18.5              | 68               | 75            | 333               | 56                 | 64                |
| Michigan.....       | 30                | 24          | 15                | 11.5             | 11.0    | 12.5              | 326              | 264           | 188               | 50                 | 59                |
| Wisconsin.....      | 19                | 17          | 24                | 12.0             | 11.0    | 11.3              | 231              | 187           | 271               | 54                 | 64                |
| Minnesota.....      | 71                | 15          | 14                | 10.9             | 8.5     | 8.0               | 721              | 128           | 112               | 43                 | 54                |
| Iowa.....           | 7                 | 5           | 14                | 13.8             | 13.5    | 15.0              | 89               | 68            | 210               | 64                 | 68                |
| Missouri.....       | 1                 | 1           | 1                 | 10.8             | 11.0    | 9.0               | 11               | 11            | 9                 | 67                 | 76                |
| North Dakota.....   | 19                | 2           | 2                 | 10.4             | 3.0     | 1.5               | 213              | 6             | 3                 | 51                 | 63                |
| South Dakota.....   | 13                | 1           | 1                 | 10.3             | 5.0     | 5.0               | 201              | 5             | 5                 | 48                 | 72                |
| Nebraska.....       | 1                 | 1           | (?)               | 10.1             | 11.0    | -----             | 9                | 11            | -----             | 51                 | -----             |
| North Central.....  | 212               | 113         | 130               | 12.4             | 11.9    | 14.2              | 2,520            | 1,348         | 1,845             | 54.4               | 62.4              |
| Delaware.....       | 1                 | 1           | 1                 | 11.4             | 10.0    | 12.0              | 11               | 10            | 12                | 73                 | 69                |
| Maryland.....       | 7                 | 6           | 5                 | 19.4             | 18.0    | 22.0              | 138              | 108           | 110               | 59                 | 62                |
| Virginia.....       | 14                | 13          | 14                | 13.3             | 13.0    | 14.0              | 182              | 169           | 196               | 66                 | 71                |
| West Virginia.....  | 22                | 22          | 21                | 17.9             | 18.5    | 20.5              | 407              | 407           | 430               | 66                 | 73                |
| North Carolina..... | 5                 | 4           | 4                 | 13.4             | 17.0    | 16.0              | 66               | 68            | 64                | 71                 | 78                |
| South Atlantic..... | 49                | 46          | 45                | 16.2             | 16.6    | 18.0              | 804              | 762           | 812               | 65.6               | 71.3              |
| Kentucky.....       | 2                 | 2           | 2                 | 9.9              | 8.0     | 10.0              | 23               | 16            | 20                | 80                 | 85                |
| Tennessee.....      | 2                 | 2           | 2                 | 13.6             | 10.5    | 13.5              | 27               | 21            | 27                | 78                 | 82                |
| South Central.....  | 4                 | 4           | 4                 | 11.2             | 9.2     | 11.8              | 50               | 37            | 47                | 78.4               | 83.0              |
| United States.....  | 630               | 462         | 480               | 15.8             | 17.0    | 18.9              | 9,496            | 7,844         | 9,062             | 55.8               | 59.0              |

<sup>1</sup> Preliminary.<sup>2</sup> Less than 500 acres.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 106.—*Buckwheat: Acreage price per bushel received by producers, United States, 1925-26 to 1934-35*

| Year         | Sept. 15 | Oct. 15 | Nov. 15 | Dec. 15 | Jan. 15 | Feb. 15 | Mar. 15 | Apr. 15 | May 15 | June 15 | July 15 | Aug. 15 | Weighted average |
|--------------|----------|---------|---------|---------|---------|---------|---------|---------|--------|---------|---------|---------|------------------|
|              | Cents    | Cents   | Cents   | Cents   | Cents   | Cents   | Cents   | Cents   | Cents  | Cents   | Cents   | Cents   | Cents            |
| 1925-26..... | 101.2    | 87.6    | 86.7    | 87.9    | 85.7    | 80.9    | 81.7    | 82.5    | 85.0   | 90.1    | 89.9    | 93.7    | 87.2             |
| 1926-27..... | 90.4     | 86.5    | 83.6    | 83.5    | 83.6    | 84.6    | 86.0    | 85.1    | 88.1   | 98.8    | 101.0   | 98.1    | 87.1             |
| 1927-28..... | 92.3     | 82.9    | 79.4    | 81.0    | 82.0    | 85.2    | 90.2    | 94.8    | 102.3  | 109.0   | 108.0   | 98.1    | 86.9             |
| 1928-29..... | 92.6     | 84.5    | 84.8    | 88.7    | 91.2    | 94.3    | 94.1    | 96.4    | 96.5   | 94.7    | 100.4   | 99.6    | 89.9             |
| 1929-30..... | 96.6     | 95.8    | 95.6    | 95.9    | 97.3    | 95.8    | 94.9    | 94.8    | 95.7   | 100.0   | 98.3    | 97.4    | 96.3             |
| 1930-31..... | 97.1     | 90.7    | 82.8    | 80.0    | 79.1    | 78.6    | 77.4    | 75.2    | 73.2   | 72.6    | 70.0    | 59.2    | 78.9             |
| 1931-32..... | 52.4     | 40.2    | 41.2    | 41.9    | 42.1    | 40.9    | 41.7    | 41.4    | 40.9   | 42.3    | 44.2    | 44.3    | 42.3             |
| 1932-33..... | 43.0     | 40.3    | 39.0    | 38.3    | 39.2    | 39.1    | 39.5    | 42.7    | 48.4   | 53.6    | 66.3    | 67.3    | 43.4             |
| 1933-34..... | 68.4     | 56.7    | 52.5    | 51.3    | 52.1    | 52.8    | 54.3    | 55.5    | 55.5   | 60.8    | 64.7    | 67.0    | 55.8             |
| 1934-35..... | 68.8     | 60.4    | 55.5    | 56.1    | -----   | -----   | -----   | -----   | -----  | -----   | -----   | -----   | 59.0             |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting state price averages for the crop-marketing season. Data for earlier years in 1928 yearbook, table 118. Only monthly prices are comparable.

TABLE 107.—*Buckwheat: Acreage, production, value, and foreign trade, United States, 1919-34*

| Year                    | Acreage harvested | Average yield per acre | Production    | Weighted average price per bushel received by producers | Farm value, basis weighted average price | Foreign trade, including flour, year beginning July 1 |               |                          |
|-------------------------|-------------------|------------------------|---------------|---|--|---|---------------|--------------------------|
|                         |                   |                        |               |   |  | Domestic exports                                      | Imports       | Net balance <sup>2</sup> |
|                         | 1,000 acres       | Bushels                | 1,000 bushels | Cents   | 1,000 dollars                            | 1,000 bushels   | 1,000 bushels | 1,000 bushels            |
| 1919.....               | 745               | 17.1                   | 12,690        |   |  |   |               |                          |
| 1919.....               | 733               | 17.3                   | 12,707        | 158.7   | 20,163                                   | 245   | 160           | +85                      |
| 1920.....               | 729               | 16.7                   | 12,193        | 125.4   | 15,288                                   | 399   | 336           | +63                      |
| 1921.....               | 640               | 18.5                   | 11,822        | 87.9  | 10,391                                   | 485   | 113           | +372                     |
| 1922.....               | 729               | 16.2                   | 11,776        | 89.5  | 10,536                                   | 172   | 266           | -114                     |
| 1923.....               | 689               | 16.8                   | 11,596        | 95.8  | 11,104                                   | 92  | 322           | -230                     |
| 1924.....               | 717               | 16.8                   | 12,004        |   |  |   |               |                          |
| 1924.....               | 737               | 17.0                   | 12,508        | 107.4   | 13,433                                   | 191   | 546           | -355                     |
| 1925.....               | 742               | 16.9                   | 12,559        | 87.2  | 10,950                                   | 79  | 88            | -9                       |
| 1926.....               | 679               | 16.2                   | 10,976        | 87.1  | 9,565                                    | 66  | 86            | -20                      |
| 1927.....               | 764               | 16.8                   | 12,820        | 86.9  | 11,137                                   | 554   | 74            | +480                     |
| 1928.....               | 679               | 14.9                   | 10,117        | 89.9  | 9,095                                    | 229   | 79            | +150                     |
| 1929.....               | 622               | 13.4                   | 8,359         |   |  |   |               |                          |
| 1929.....               | 627               | 13.9                   | 8,692         | 96.3  | 8,367                                    | 22  | 171           | -149                     |
| 1930.....               | 573               | 12.1                   | 6,960         | 78.9  | 5,493                                    | 85  | 426           | -341                     |
| 1931.....               | 505               | 17.6                   | 8,890         | 42.3  | 3,764                                    | 524   | 14            | +510                     |
| 1932.....               | 454               | 14.8                   | 6,727         | 43.4  | 2,918                                    | 33  | 62            | -29                      |
| 1933.....               | 462               | 17.0                   | 7,844         | 55.8  | 4,380                                    | 42  | 104           | -62                      |
| 1934 <sup>3</sup> ..... | 490               | 18.9                   | 9,062         | 59.0  | 5,351                                    |   |               |                          |

<sup>1</sup> Compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1919-26; January and June issues, 1927-34 and official records of the Bureau of Foreign and Domestic Commerce. Buckwheat—imports for consumption, 1919-24 and 1930-34—general imports, 1925-29; buckwheat flour imports for consumption 1919-34. Buckwheat flour converted to terms of grain on the basis that 1 barrel of flour is the product of 7 bushels of grain.

<sup>2</sup> The difference between total exports (domestic exports plus reexports) and total imports. Beginning 1930-31 domestic exports and imports for consumption. See introductory text. Net exports indicated by +; net imports indicated by -.

<sup>3</sup> Preliminary.

#### Bureau of Agricultural Economics

Production figures are estimates of the Crop Reporting Board, revised 1919-28. See introductory text. Italic figures are census returns. See 1927 Yearbook, table 111, for data for earlier years.

TABLE 108.—*Sorghums <sup>1</sup> cut for grain, forage, and all purposes: Acreage, production, and price per bushel received by producers, United States, 1919-34*

| Year                    | Grain       |                |               | Forage      |                |                  | All purposes |                           |  |                                       |                                |
|-------------------------|-------------|----------------|---------------|-------------|----------------|------------------|--------------|---------------------------|--|---------------------------------------|--------------------------------|
|                         | Acreage     | Yield per acre | Production    | Acreage     | Yield per acre | Production       | Acreage      | Equivalent yield per acre | Equivalent production on total acreage | Price per bushel, Dec. 1 <sup>2</sup> | Farm value, basis Dec. 1 price |
|                         |             |                |               |             |                |                  |              |                           |  |                                       |                                |
|                         | 1,000 acres | Bushels        | 1,000 bushels | 1,000 acres | Short tons     | 1,000 short tons | 1,000 acres  | Bushels                   | 1,000 bushels                          | Cents                                 | 1,000 dollars                  |
| 1919.....               | 3,726       | 19.8           | 73,654        |             |                |                  |              |                           |  |                                       |                                |
| 1919.....               | 3,630       | 20.4           | 73,952        | 2,665       | 1.67           | 4,438            | 6,295        | 19.4                      | 122,330                                | 128.0                                 | 156,531                        |
| 1920.....               | 4,027       | 21.8           | 87,734        | 2,513       | 1.78           | 4,479            | 6,540        | 20.9                      | 136,367                                | 94.2                                  | 128,504                        |
| 1921.....               | 3,700       | 19.2           | 70,950        | 2,424       | 1.57           | 3,794            | 6,124        | 18.3                      | 112,273                                | 39.2                                  | 44,062                         |
| 1922.....               | 3,369       | 14.7           | 49,523        | 2,127       | 1.37           | 2,917            | 5,496        | 13.7                      | 75,530                                 | 87.2                                  | 65,898                         |
| 1923.....               | 4,204       | 14.7           | 61,648        | 2,150       | 1.40           | 3,015            | 6,354        | 13.9                      | 88,466                                 | 93.5                                  | 82,674                         |
| 1924.....               | 3,526       | 16.6           | 58,700        |             |                |                  |              |                           |  |                                       |                                |
| 1924.....               | 3,506       | 16.7           | 58,474        | 2,134       | 1.40           | 3,050            | 5,690        | 15.4                      | 87,870                                 | 85.5                                  | 75,095                         |
| 1925.....               | 3,887       | 14.2           | 55,244        | 2,385       | 1.29           | 3,076            | 6,272        | 13.1                      | 82,224                                 | 75.1                                  | 61,733                         |
| 1926.....               | 4,211       | 16.8           | 70,869        | 2,229       | 1.32           | 2,850            | 6,440        | 15.8                      | 101,502                                | 54.2                                  | 55,007                         |
| 1927.....               | 4,270       | 17.0           | 72,738        | 2,452       | 1.47           | 3,613            | 6,722        | 16.0                      | 107,261                                | 77.1                                  | 82,666                         |
| 1928.....               | 4,121       | 17.8           | 73,427        | 2,406       | 1.48           | 3,566            | 6,527        | 17.1                      | 111,690                                | 65.7                                  | 73,418                         |
| 1929 <sup>3</sup> ..... | 3,622       | 13.9           | 49,109        |             |                |                  |              |                           |  |                                       |                                |
| 1929.....               | 3,467       | 14.2           | 49,599        | 2,684       | 1.37           | 3,654            | 6,131        | 13.2                      | 81,041                                 | 66.8                                  | 54,173                         |
| 1930.....               | 3,449       | 10.8           | 37,203        | 3,137       | 1.17           | 3,678            | 6,586        | 9.8                       | 64,416                                 | 56.2                                  | 30,220                         |
| 1931.....               | 4,508       | 15.6           | 70,116        | 2,657       | 1.30           | 3,446            | 7,166        | 14.7                      | 105,369                                | 25.6                                  | 27,025                         |
| 1932.....               | 4,548       | 14.4           | 65,339        | 3,816       | 1.35           | 4,471            | 7,894        | 13.5                      | 106,306                                | 19.1                                  | 20,349                         |
| 1933.....               | 4,883       | 11.8           | 57,490        | 3,266       | 1.24           | 4,044            | 8,149        | 10.8                      | 83,082                                 | 51.0                                  | 44,911                         |
| 1934 <sup>4</sup> ..... | 2,998       | 6.2            | 18,558        | 4,571       | .77            | 3,527            | 7,599        | 4.6                       | 34,542                                 | 82.3                                  | 28,415                         |

<sup>1</sup> Kaffirs, milo, feterita, durra, etc.

<sup>2</sup> From 1919 to 1924, Nov. 15 price; 1925 and 1926, Dec. 1 price; 1927-33, average price for the crop-marketing season; 1934, Dec. 1 price.

<sup>3</sup> Includes sorgo seed.

<sup>4</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board, revised 1919-28. See introductory text. Italic figures are census returns.

TABLE 109.—*Sorghums:*<sup>1</sup> *Acreage, yield, production, and average price per bushel received by producers, by States, averages, and annual 1933 and 1934*

| State              | Acreage for all purposes |             |                   | Equivalent yield per acre |         |                   | Production for all purposes <sup>2</sup> |               |                   | Price for crop of— |                   |
|--------------------|--------------------------|-------------|-------------------|---------------------------|---------|-------------------|--|---------------|-------------------|--------------------|-------------------|
|                    | Average, 1927-31         | 1933        | 1934 <sup>3</sup> | Average, 1922-31          | 1933    | 1934 <sup>3</sup> | Average, 1927-31                         | 1933          | 1934 <sup>3</sup> | 1933               | 1934 <sup>4</sup> |
|                    | 1,000 acres              | 1,000 acres | 1,000 acres       | Bushels                   | Bushels | Bushels           | 1,000 bushels                            | 1,000 bushels | 1,000 bushels     | Cents              | Cents             |
| Missouri.....      | 76                       | 88          | 119               | 14.6                      | 18.0    | 7.0               | 1,182                                    | 1,408         | 833               | 56                 | 91                |
| Nebraska.....      | 19                       | 37          | 74                | 15.4                      | 15.5    | 2.0               | 331                                      | 574           | 148               | 61                 | 129               |
| Kansas.....        | 1,130                    | 1,607       | 1,205             | 15.0                      | 10.0    | 3.0               | 17,578                                   | 16,070        | 3,615             | 38                 | 67                |
| Oklahoma.....      | 1,377                    | 1,400       | 1,232             | 11.0                      | 8.5     | 6.0               | 14,336                                   | 11,900        | 7,392             | 47                 | 80                |
| Texas.....         | 3,428                    | 4,228       | 4,482             | 15.0                      | 11.0    | 4.0               | 50,732                                   | 46,508        | 17,928            | 58                 | 85                |
| Colorado.....      | 202                      | 284         | 102               | 11.2                      | 7.5     | 3.0               | 2,301                                    | 2,130         | 306               | 34                 | 104               |
| New Mexico.....    | 287                      | 372         | 242               | 16.8                      | 14.0    | 7.0               | 4,535                                    | 5,208         | 1,694             | 42                 | 90                |
| Arizona.....       | 26                       | 35          | 35                | 25.3                      | 30.0    | 26.0              | 709                                      | 1,050         | 910               | 42                 | 78                |
| California.....    | 81                       | 98          | 78                | 27.5                      | 33.0    | 22.0              | 2,203                                    | 3,234         | 1,716             | 54                 | 78                |
| United States..... | 6,626                    | 8,149       | 7,569             | 14.3                      | 10.8    | 4.6               | 93,955                                   | 88,082        | 34,542            | 51.0               | 82.3              |

<sup>1</sup> Kafir, milo, feterita, durra, etc.<sup>2</sup> Includes grain equivalent on forage acreage.<sup>3</sup> Preliminary.<sup>4</sup> Dec. 1 price.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 110.—*Grain sorghums:*<sup>1</sup> *Receipts at Kansas City, 1924-25 to 1933-34*

| Year         | Nov.      | Dec.      | Jan.      | Feb.      | Mar.      | Apr.      | May       | June      | July      | Aug.      | Sept.     | Oct.      | Total     |
|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|              | 1,000 bu. | 1,000 bu. | 1,000 bu. | 1,000 bu. | 1,000 bu. | 1,000 bu. | 1,000 bu. | 1,000 bu. | 1,000 bu. | 1,000 bu. | 1,000 bu. | 1,000 bu. | 1,000 bu. |
| 1924-25..... | 647       | 1,152     | 683       | 636       | 497       | 320       | 301       | 440       | 221       | 183       | 68        | 24        | 5,172     |
| 1925-26..... | 279       | 629       | 416       | 290       | 251       | 211       | 280       | 469       | 162       | 94        | 136       | 97        | 3,334     |
| 1926-27..... | 397       | 493       | 626       | 442       | 293       | 216       | 192       | 241       | 249       | 285       | 79        | 112       | 3,626     |
| 1927-28..... | 410       | 905       | 696       | 519       | 592       | 392       | 323       | 343       | 224       | 87        | 51        | 236       | 4,778     |
| 1928-29..... | 449       | 675       | 856       | 525       | 705       | 426       | 394       | 668       | 207       | 196       | 97        | 182       | 5,880     |
| 1929-30..... | 294       | 626       | 296       | 447       | 327       | 296       | 202       | 179       | 68        | 42        | 52        | 34        | 2,863     |
| 1930-31..... | 299       | 239       | 162       | 145       | 130       | 139       | 109       | 204       | 41        | 38        | 31        | 134       | 1,671     |
| 1931-32..... | 257       | 76        | 168       | 181       | 115       | 143       | 119       | 70        | 70        | 77        | 69        | 148       | 1,493     |
| 1932-33..... | 105       | 127       | 133       | 78        | 88        | 154       | 116       | 90        | 119       | 34        | 60        | 43        | 1,147     |
| 1933-34..... | 217       | 193       |           |           |           |           |           |           |           |           |           |           |           |

<sup>1</sup> Includes kafir, milo, and feterita. Receipts for 1909-10 to 1923-24 available in 1931 Yearbook, table 131.

Bureau of Agricultural Economics; compiled from annual statistical reports of Kansas City Board of Trade.

TABLE 111.—*Grain sorghums: Receipts graded by licensed inspectors, all inspection points, total of all classes under each grade, 1925-26 to 1933-34*

| Year beginning July | Grade |        |       |       |        | Total  |
|---------------------|-------|--------|-------|-------|--------|--------|
|                     | No. 1 | No. 2  | No. 3 | No. 4 | Sample |        |
|                     | Cars  | Cars   | Cars  | Cars  | Cars   | Cars   |
| 1925-26.....        | 312   | 4,158  | 5,796 | 1,639 | 495    | 12,400 |
| 1926-27.....        | 878   | 7,180  | 6,674 | 1,792 | 691    | 17,215 |
| 1927-28.....        | 1,175 | 9,885  | 8,125 | 3,143 | 965    | 23,398 |
| 1928-29.....        | 868   | 7,247  | 5,400 | 3,794 | 3,969  | 24,276 |
| 1929-30.....        | 557   | 5,495  | 4,043 | 3,664 | 1,722  | 15,481 |
| 1930-31.....        | 224   | 2,368  | 2,432 | 1,240 | 390    | 6,554  |
| 1931-32.....        | 1,250 | 11,556 | 3,197 | 944   | 597    | 17,550 |
| 1932-33.....        | 323   | 2,501  | 1,183 | 757   | 341    | 5,105  |
| 1933-34.....        | 409   | 2,614  | 1,081 | 427   | 465    | 4,996  |

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TABLE 112.—*Kafir, No. 2 White: Weighted average price per bushel of reported cash sales, Kansas City, 1925-26 to 1934-35*

| Year         | Nov.         | Dec.         | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | July         | Aug.         | Sept.        | Oct.         | Average      |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|              | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> |
| 1925-26..... | 82           | 77           | 77           | 72           | 68           | 70           | 69           | 70           | 79           | 76           | 74           | 71           | 73           |
| 1926-27..... | 64           | 64           | 63           | 63           | 65           | 69           | 79           | 102          | 110          | 97           | -----        | 70           | -----        |
| 1927-28..... | 69           | 71           | 74           | 81           | 88           | 90           | 92           | 91           | 92           | 83           | 89           | 83           | 82           |
| 1928-29..... | 78           | 74           | 75           | 80           | 71           | 71           | 71           | 74           | 89           | 90           | 105          | 81           | 77           |
| 1929-30..... | 77           | 73           | 76           | 72           | 77           | 91           | 91           | 94           | 92           | 101          | 98           | -----        | -----        |
| 1930-31..... | 63           | 61           | 58           | 53           | 53           | 59           | 58           | 57           | 51           | 42           | 42           | 36           | 55           |
| 1931-32..... | 40           | 33           | 34           | 31           | 32           | 32           | 31           | -----        | 32           | 36           | 34           | 25           | -----        |
| 1932-33..... | 28           | 25           | 25           | 24           | 27           | 39           | 43           | 52           | 68           | 67           | 64           | 52           | 44           |
| 1933-34..... | 44           | 41           | 44           | 42           | 42           | 46           | 52           | 53           | 76           | 90           | -----        | -----        | -----        |
| 1934-35..... | -----        | 116          | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----        |

Bureau of Agricultural Economics; computed by weighting selling price by number of car lots sold as reported in Kansas City Grain Market Review, formerly Daily Price Current.

Quoted per 100 pounds; converted to bushels of 56 pounds. Data for 1909-10 to 1924-25 available in 1930 Yearbook, table 123.

# STATISTICS OF COTTON, SUGAR, AND TOBACCO

TABLE 113.—Cotton: Acreage, production, value, and foreign trade, United States, 1866-1934

| Year | Acreage in cultivation July 1 <sup>1</sup> | Acreage harvested | Average yield per acre | Production <sup>2</sup> | Price per pound received by producers Dec. 1 <sup>3</sup> | Farm value, basis Dec. 1 price | Market price per pound, year beginning August <sup>4</sup> |             | Foreign trade, year beginning August |                        |                                |
|------|--|-------------------|------------------------|-------------------------|---|--------------------------------|--|-------------|--------------------------------------|------------------------|--------------------------------|
|      |  |                   |                        |                         |   |                                | New York   | New Orleans | Domestic exports <sup>5 6 7</sup>    | Imports <sup>8 9</sup> | Net exports <sup>10 11 9</sup> |
|      | 1,000 acres                                | 1,000 acres       | Lb.                    | 1,000 bales             | Cents   | 1,000 dollars                  | Cents  | Cents       | 1,000 bales                          | 1,000 bales            | 1,000 bales                    |
| 1866 | 7,666                                      | 121.5             | 2,097                  | 32.16                   | 10.1  | 32.16                          | 32.16  | 10.1        | 1,323                                | 2                      | 1,324                          |
| 1867 | 7,864                                      | 142.6             | 2,520                  | 24.54                   | 11.1  | 24.54                          | 24.54  | 11.1        | 1,511                                | 2                      | 1,510                          |
| 1868 | 6,973                                      | 150.7             | 2,366                  | 28.64                   | 11.1  | 28.64                          | 28.64  | 11.1        | 1,288                                | 6                      | 1,284                          |
| 1869 |  |                   | 3,012                  |                         |   |                                |  |             |                                      |                        |                                |
| 1869 | 7,751                                      | 155.4             | 3,011                  | 25.31                   |   | 25.31                          | 25.31  |             | 1,980                                | 4                      | 1,977                          |
| 1870 | 9,238                                      | 208.2             | 4,352                  | 17.04                   |   | 17.04                          | 17.04  |             | 2,894                                | 3                      | 2,893                          |
| 1871 | 8,285                                      | 159.0             | 2,974                  | 21.88                   |   | 21.88                          | 21.88  |             | 1,851                                | 7                      | 1,844                          |
| 1872 | 9,580                                      | 182.3             | 3,983                  | 20.22                   |   | 20.22                          | 20.22  |             | 2,437                                | 11                     | 2,426                          |
| 1873 | 10,998                                     | 168.3             | 4,168                  | 17.29                   |   | 17.29                          | 17.29  |             | 2,706                                | 5                      | 2,702                          |
| 1874 | 10,753                                     | 157.0             | 3,536                  | 15.67                   |   | 15.67                          | 15.67  |             | 2,523                                | 5                      | 2,520                          |
| 1875 | 11,348                                     | 181.2             | 4,631                  | 13.10                   |   | 13.10                          | 13.10  |             | 3,003                                | 5                      | 2,999                          |
| 1876 | 11,747                                     | 187.6             | 4,474                  | 11.89                   |   | 11.89                          | 11.89  |             | 2,869                                | 6                      | 2,864                          |
| 1877 | 12,606                                     | 170.4             | 4,773                  | 11.17                   |   | 11.17                          | 11.17  |             | 3,198                                | 7                      | 3,194                          |
| 1878 | 13,639                                     | 167.5             | 5,074                  | 10.82                   |   | 10.82                          | 10.82  |             | 3,265                                | 6                      | 3,259                          |
| 1879 | 14,480                                     |                   | 5,755                  |                         |   |                                |  |             |                                      |                        |                                |
| 1879 | 14,474                                     | 180.5             | 5,756                  | 12.13                   |   | 12.13                          | 12.13  |             | 3,711                                | 7                      | 3,705                          |
| 1880 | 15,921                                     | 190.9             | 6,606                  | 11.36                   |   | 11.36                          | 11.36  |             | 4,409                                | 9                      | 4,403                          |
| 1881 | 16,483                                     | 149.0             | 5,456                  | 12.09                   |   | 12.09                          | 12.09  |             | 3,430                                | 9                      | 3,426                          |
| 1882 | 15,638                                     | 208.9             | 6,949                  | 10.81                   | 9.12  | 311,844                        | 10.81  |             | 4,582                                | 9                      | 4,577                          |
| 1883 | 16,295                                     | 162.0             | 5,713                  | 10.87                   | 9.13  | 282,501                        | 10.87  |             | 3,745                                | 15                     | 3,734                          |
| 1884 | 16,849                                     | 155.1             | 5,682                  | 10.74                   | 9.19  | 251,531                        | 10.74  |             | 3,740                                | 10                     | 3,733                          |
| 1885 | 17,922                                     | 169.9             | 6,578                  | 9.47                    | 8.39  | 267,481                        | 9.47   |             | 4,193                                | 11                     | 4,185                          |
| 1886 | 18,370                                     | 164.3             | 6,505                  | 9.91                    | 8.06  | 254,733                        | 9.91   |             | 4,274                                | 9                      | 4,266                          |
| 1887 | 18,793                                     | 175.1             | 7,047                  | 10.15                   | 8.55  | 294,527                        | 10.15  |             | 4,557                                | 11                     | 4,547                          |
| 1888 | 19,520                                     | 169.5             | 6,938                  | 10.44                   | 8.50  | 294,183                        | 10.44  |             | 4,720                                | 17                     | 4,704                          |
| 1889 | 20,175                                     |                   | 7,473                  |                         |   |                                |  |             |                                      |                        |                                |
| 1889 | 20,191                                     | 176.9             | 7,473                  | 11.27                   | 8.55  | 319,334                        | 11.27  | 10.69       | 4,934                                | 19                     | 4,915                          |
| 1890 | 20,937                                     | 195.5             | 8,653                  | 9.48                    | 8.59  | 368,108                        | 9.48   | 9.08        | 5,859                                | 45                     | 5,815                          |
| 1891 | 21,503                                     | 198.7             | 9,035                  | 7.24                    | 7.24  | 323,943                        | 7.68   | 7.28        | 5,888                                | 61                     | 5,827                          |
| 1892 | 18,869                                     | 168.7             | 6,700                  | 8.45                    | 8.34  | 277,556                        | 8.45   | 8.15        | 4,456                                | 90                     | 4,363                          |
| 1893 | 20,256                                     | 175.3             | 7,493                  | 7.35                    | 7.00  | 280,096                        | 7.78   | 7.30        | 5,309                                | 58                     | 5,258                          |
| 1894 | 21,686                                     | 219.0             | 9,901                  | 6.38                    | 4.59  | 230,071                        | 6.38   | 5.86        | 7,010                                | 104                    | 6,908                          |
| 1895 | 19,639                                     | 172.2             | 7,162                  | 8.10                    | 7.62  | 272,378                        | 8.10   | 7.68        | 4,710                                | 115                    | 4,595                          |
| 1896 | 23,230                                     | 175.2             | 8,533                  | 7.71                    | 6.66  | 283,463                        | 7.71   | 7.28        | 6,172                                | 119                    | 6,057                          |

<sup>1</sup> For 1909-26, inclusive, the acreage figures relate to June 25 instead of July 1.

<sup>2</sup> Department figures are in running bales for all years prior to 1899, and in 500-pound gross-weight bales 1899-1934. Agricultural census figures for all periods are in running bales.

<sup>3</sup> Calculations of average price and farm value not completed. Beginning with 1908 prices are weighted average prices for crop-marketing season.

<sup>4</sup> New York prices 1866-87 to August 1871, Chronological and Statistical History of Cotton, by E. J. Donnell; 1871-72 to August 1900, Commercial and Financial Chronicle, average of daily quotations; beginning 1900 from reports of the New York Cotton Exchange except Sept. 23-Nov. 16, 1914, when the exchange was closed (prices for this period from the Commercial and Financial Chronicle). New Orleans prices were from same sources prior to Aug. 16, 1915, since which date from reports of the New Orleans Cotton Exchange direct to this bureau. These central market prices are for Middling grade, 3/4-inch staple, only.

<sup>5</sup> Excluding linters from 1914 to 1934.

<sup>6</sup> Compiled from Commerce and Navigation of the United States, 1866-1917; Foreign Commerce and Navigation of the United States, 1918; Monthly Summary of Foreign Commerce of the United States, June and July 1919-34, and January 1927-34.

<sup>7</sup> Bales of 500 pounds gross weight.

<sup>8</sup> Bales of 478 pounds net, which are equivalent to bales of 500 pounds gross weight.

<sup>9</sup> Total exports (domestic plus foreign) minus imports.

<sup>10</sup> Year beginning July.

<sup>11</sup> 13 months, July-July.

TABLE 113.—Cotton Acreage, production, value, and foreign trade, United States, 1866-1934—Continued

| Year               | Acreage in cultivation July 1 <sup>1</sup> | Acreage harvested | Average yield per acre | Production <sup>2</sup> | Price per pound received by producers Dec. 1 <sup>3</sup> | Farm value, basis Dec. 1 price | Market price per pound, year beginning August <sup>4</sup> |             | Foreign trade, year beginning August |                      |                                |
|--------------------|--|-------------------|------------------------|-------------------------|---|--------------------------------|--|-------------|--------------------------------------|----------------------|--------------------------------|
|                    |  |                   |                        |                         |   |                                | New York   | New Orleans | Domestic exports <sup>5 6 7</sup>    | Imports <sup>8</sup> | Net exports <sup>5 6 7 9</sup> |
|                    | 1,000 acres                                | 1,000 acres       | Lb.                    | 1,000 bales             | Cents   | 1,000 dollars                  | Cents  | Cents       | 1,000 bales                          | 1,000 bales          | 1,000 bales                    |
| 1897               | 25,131                                     | 25,131            | 209.0                  | 10,899                  | 6.68  | 367,065                        | 6.40   | 5.84        | 7,757                                | 102                  | 7,656                          |
| 1898               | 24,715                                     | 24,715            | 223.1                  | 11,278                  | 5.73  | 330,282                        | 6.00   | 5.46        | 7,662                                | 105                  | 7,557                          |
| 1899               | 24,875                                     | 24,875            |                        | 9,585                   |   |                                |  |             |                                      |                      |                                |
| 1899               | 24,163                                     | 24,163            | 185.0                  | 9,346                   | 6.98  | 325,208                        | 8.36   | 8.03        | 6,228                                | 140                  | 6,091                          |
| 1900               | 24,886                                     | 24,886            | 184.7                  | 10,124                  | 9.15  | 453,285                        | 9.38   |             | 6,800                                | 109                  | 6,692                          |
| 1901               | 27,050                                     | 27,050            | 185.2                  | 9,508                   | 7.03  | 334,075                        | 8.73   | 8.40        | 6,949                                | 202                  | 6,750                          |
| 1902               | 27,561                                     | 27,561            | 184.7                  | 10,630                  | 7.60  | 403,717                        | 9.96   | 9.64        | 7,084                                | 151                  | 6,936                          |
| 1903               | 27,762                                     | 27,762            | 169.9                  | 9,851                   | 10.49   | 516,764                        | 12.84  | 12.49       | 6,207                                | 103                  | 6,107                          |
| 1904               | 30,077                                     | 30,077            | 213.7                  | 13,438                  | 8.98  | 603,433                        | 9.09   | 8.70        | 8,908                                | 129                  | 8,781                          |
| 1905               | 27,753                                     | 27,753            | 182.3                  | 10,576                  | 10.78   | 569,788                        | 11.30  | 10.97       | 7,118                                | 144                  | 6,980                          |
| 1906               | 31,404                                     | 31,404            | 202.3                  | 13,274                  | 9.58  | 635,537                        | 11.24  | 10.92       | 8,943                                | 227                  | 8,716                          |
| 1907               | 30,729                                     | 30,729            | 172.9                  | 11,106                  | 10.36   | 575,207                        | 11.53  | 11.41       | 7,666                                | 153                  | 7,513                          |
| 1908               | 31,091                                     | 31,091            | 203.8                  | 13,241                  | 9.01  | 596,608                        | 10.23  | 9.80        | 8,955                                | 181                  | 8,774                          |
| 1909               | 32,044                                     | 32,044            |                        | 10,649                  |   |                                |  |             |                                      |                      |                                |
| 1909               | 31,744                                     | 31,555            | 156.5                  | 10,005                  | 13.60   | 680,246                        | 14.66  | 14.33       | 6,353                                | 170                  | 6,194                          |
| 1910               | 32,480                                     | 31,508            | 176.2                  | 11,609                  | 13.95   | 809,724                        | 14.87  | 14.65       | 8,027                                | 245                  | 7,787                          |
| 1911               | 35,634                                     | 34,916            | 215.0                  | 15,694                  | 9.60  | 752,925                        | 10.85  | 10.85       | 11,116                               | 238                  | 10,885                         |
| 1912               | 35,199                                     | 32,557            | 201.4                  | 13,703                  | 11.49   | 787,232                        | 12.29  | 12.20       | 9,146                                | 249                  | 8,899                          |
| 1913               | 35,721                                     | 35,206            | 192.3                  | 14,158                  | 12.50   | 884,926                        | 13.21  | 13.12       | 9,508                                | 273                  | 9,235                          |
| 1914               | 36,197                                     | 35,615            | 216.4                  | 16,112                  | 7.36  | 592,830                        | 13.89  |             | 8,702                                | 400                  | 8,322                          |
| 1915               | 30,544                                     | 29,951            | 178.5                  | 11,172                  | 11.22   | 626,774                        | 11.98  | 11.68       | 6,113                                | 458                  | 5,673                          |
| 1916               | 33,977                                     | 33,071            | 165.6                  | 11,448                  | 17.34   | 992,304                        | 19.28  | 18.84       | 5,525                                | 311                  | 5,219                          |
| 1917               | 33,064                                     | 32,245            | 167.4                  | 11,284                  | 27.12   | 1,529,862                      | 29.68  | 28.96       | 4,402                                | 231                  | 4,175                          |
| 1918               | 36,123                                     | 35,038            | 164.1                  | 12,018                  | 28.93   | 1,738,071                      | 31.01  | 29.87       | 5,774                                | 211                  | 5,568                          |
| 1919               | 35,740                                     | 32,906            |                        | 11,576                  |   |                                |  |             |                                      |                      |                                |
| 1919               | 34,573                                     | 32,906            | 165.9                  | 11,411                  | 35.41   | 2,020,398                      | 38.29  | 38.21       | 6,707                                | 732                  | 5,993                          |
| 1920               | 35,872                                     | 34,408            | 186.7                  | 13,429                  | 15.92   | 1,069,257                      | 17.89  | 16.55       | 5,973                                | 237                  | 5,735                          |
| 1921               | 29,716                                     | 28,678            | 132.5                  | 7,945                   | 17.01   | 675,773                        | 18.92  | 17.92       | 6,348                                | 380                  | 5,980                          |
| 1922               | 32,176                                     | 31,361            | 148.8                  | 9,755                   | 22.87   | 1,115,578                      | 26.24  | 25.94       | 5,007                                | 492                  | 4,536                          |
| 1923               | 37,000                                     | 35,550            | 136.4                  | 10,140                  | 28.69   | 1,454,320                      | 31.11  | 30.33       | 5,815                                | 306                  | 5,530                          |
| 1924               | 39,804                                     | 39,804            |                        | 15,683                  |   |                                |  |             |                                      |                      |                                |
| 1924               | 40,692                                     | 39,503            | 165.0                  | 13,630                  | 22.91   | 1,561,022                      | 24.74  | 24.21       | 8,240                                | 328                  | 7,923                          |
| 1925               | 45,972                                     | 44,390            | 173.5                  | 16,105                  | 19.59   | 1,577,091                      | 20.53  | 19.71       | 8,267                                | 340                  | 7,939                          |
| 1926               | 45,847                                     | 44,616            | 192.8                  | 17,978                  | 12.47   | 1,121,185                      | 15.15  | 14.74       | 11,299                               | 419                  | 10,900                         |
| 1927               | 39,479                                     | 38,349            | 161.7                  | 12,956                  | 20.19   | 1,308,088                      | 20.42  | 19.98       | 7,857                                | 354                  | 7,522                          |
| 1928               | 43,735                                     | 42,432            | 163.3                  | 14,477                  | 17.99   | 1,302,036                      | 19.73  | 18.98       | 8,419                                | 479                  | 7,967                          |
| 1929               | 45,827                                     | 45,827            |                        | 14,674                  |   |                                |  |             |                                      |                      |                                |
| 1929               | 44,458                                     | 43,242            | 164.1                  | 14,825                  | 16.79   | 1,244,846                      | 16.60  | 16.16       | 7,035                                | 396                  | 6,650                          |
| 1930               | 43,339                                     | 42,454            | 157.0                  | 13,932                  | 9.46  | 659,041                        | 10.38  | 10.08       | 7,133                                | 112                  | 7,029                          |
| 1931               | 39,109                                     | 38,705            | 211.5                  | 17,096                  | 5.66  | 483,627                        | 6.34   | 6.20        | 9,193                                | 138                  | 9,081                          |
| 1932               | 36,542                                     | 35,939            | 178.3                  | 13,002                  | 6.52  | 424,006                        | 7.37   | 7.26        | 8,895                                | 136                  | 8,766                          |
| 1933               | 40,852                                     | 39,978            | 208.5                  | 13,047                  | 9.72  | 634,396                        | 11.09  | 10.92       | 7,964                                | 156                  | 7,815                          |
| 1934 <sup>10</sup> | 28,412                                     | 27,515            | 169.2                  | 9,731                   | 12.60   | 612,802                        |  |             |                                      |                      |                                |

See footnotes 1 to 9 on page 425.

<sup>12</sup> Average for 9 months only. Exchange closed Aug. 1-Nov. 17, on account of war.<sup>13</sup> Area in cultivation July 1 less removal of acreage reported by the Agricultural Adjustment Administration, less abandonment on area not under contract.<sup>14</sup> Includes imports for consumption, January-June 1934, reexports not considered.<sup>15</sup> Preliminary.

Bureau of Agricultural Economics.

Agricultural census figures in italics; other acreage, yield, and production figures are estimates of the Crop Reporting Board. Production figures conform with census annual ginning enumerations, with allowance for cross State ginnings. State figures rounded to thousands and added for United States total. Since the 1933 Yearbook was published, acreage and yield for all years have been revised to the level of the 1930 census, and cotton grown in Baja California, Mexico, ginned in California, from 1913 to 1924 has been excluded.

TABLE 114.—*Cotton: Acreage, yield, production of lint in 500-pound gross-weight bales, and weighted average price per pound received by producers, by States, averages, and annual 1933 and 1934*

| State                             | Acreage harvested |             |                   | Yield per acre   |       |                   | Production <sup>1</sup> |             |                   | Price for crop of— |                   |
|-----------------------------------|-------------------|-------------|-------------------|------------------|-------|-------------------|-------------------------|-------------|-------------------|--------------------|-------------------|
|                                   | Average, 1923-32  | 1933        | 1934 <sup>2</sup> | Average, 1923-32 | 1933  | 1934 <sup>2</sup> | Average, 1923-32        | 1933        | 1934 <sup>2</sup> | 1933               | 1934 <sup>3</sup> |
|                                   | 1,000 acres       | 1,000 acres | 1,000 acres       | Lb.              | Lb.   | Lb.               | 1,000 bales             | 1,000 bales | 1,000 bales       | Cents              | Cents             |
| Missouri.....                     | 374               | 356         | 320               | 256              | 340   | 366               | 223                     | 253         | 245               | 9.11               | 12.3              |
| Virginia.....                     | 79                | 65          | 59                | 270              | 275   | 316               | 45                      | 37          | 39                | 8.74               | 12.4              |
| North Carolina.....               | 1,432             | 1,090       | 970               | 289              | 300   | 320               | 752                     | 684         | 650               | 10.52              | 12.7              |
| South Carolina.....               | 1,879             | 1,379       | 1,282             | 208              | 255   | 259               | 856                     | 735         | 695               | 10.35              | 12.8              |
| Georgia.....                      | 3,166             | 2,147       | 2,147             | 176              | 246   | 221               | 1,241                   | 1,105       | 995               | 8.70               | 12.6              |
| Florida.....                      | 124               | 94          | 94                | 124              | 141   | 142               | 35                      | 28          | 28                | 9.24               | 12.3              |
| Tennessee.....                    | 1,065             | 884         | 769               | 196              | 240   | 250               | 479                     | 443         | 412               | 8.62               | 12.2              |
| Alabama.....                      | 3,373             | 2,378       | 2,164             | 172              | 195   | 213               | 1,255                   | 969         | 965               | 10.20              | 12.4              |
| Mississippi.....                  | 3,977             | 2,859       | 2,602             | 191              | 194   | 211               | 1,559                   | 1,159       | 1,145             | 10.05              | 12.8              |
| Arkansas.....                     | 3,382             | 2,583       | 2,247             | 188              | 193   | 186               | 1,351                   | 1,041       | 875               | 9.90               | 12.5              |
| Louisiana.....                    | 1,847             | 1,295       | 1,191             | 192              | 176   | 195               | 745                     | 477         | 458               | 9.67               | 12.7              |
| Oklahoma.....                     | 3,707             | 2,915       | 2,740             | 149              | 208   | 57                | 1,109                   | 1,266       | 325               | 9.12               | 11.8              |
| Texas.....                        | 15,598            | 11,488      | 10,454            | 139              | 185   | 110               | 4,580                   | 4,428       | 2,395             | 9.42               | 12.6              |
| New Mexico.....                   | 122               | 96          | 93                | 318              | 468   | 474               | 90                      | 94          | 92                | 9.83               | 12.9              |
| Arizona.....                      | 186               | 118         | 133               | 322              | 391   | 396               | 128                     | 96          | 110               | 11.40              | 14.1              |
| California.....                   | 222               | 208         | 223               | 386              | 500   | 543               | 200                     | 217         | 255               | 10.42              | 12.9              |
| All other.....                    | 20                | 23          | 27                | 227              | 311   | 301               | 11                      | 15          | 17                | 9.52               | 12.2              |
| United States.....                | 40,554            | 29,978      | 27,515            | 189.9            | 208.5 | 189.2             | 14,666                  | 13,047      | 9,731             | 9.72               | 12.6              |
| Baja California (old Mexico)..... | 101               | 54          | 59                | 242              | 159   | 154               | 48                      | 18          | 19                | -----              | -----             |

<sup>1</sup> Compiled from reports of the Bureau of the Census. Slight differences from census figures on ginnings are due to ginnings in one State of cotton grown in another.

<sup>2</sup> Preliminary estimate of the Department of Agriculture.

<sup>3</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 115.—*Cotton: Acreage and production in specified countries, average 1925-26 to 1929-30, annual 1932-33 to 1934-35*

| Country                  | Acreage                     |            |            |                      | Production                  |                    |                    |                      |
|--------------------------|-----------------------------|------------|------------|----------------------|-----------------------------|--------------------|--------------------|----------------------|
|                          | Average, 1925-26 to 1929-30 | 1932-33    | 1933-34    | 1934-35 <sup>1</sup> | Average, 1925-26 to 1929-30 | 1932-33            | 1933-34            | 1934-35 <sup>1</sup> |
|                          | Acres                       | Acres      | Acres      | Acres                | Bales <sup>2</sup>          | Bales <sup>2</sup> | Bales <sup>2</sup> | Bales <sup>2</sup>   |
| United States.....       | 42,000,000                  | 35,939,000 | 29,978,000 | 27,515,000           | 15,268,000                  | 13,001,000         | 13,047,000         | 9,731,000            |
| Mexico.....              | 471,632                     | 192,377    | 424,288    | 417,903              | 252,805                     | 101,537            | 260,426            | 208,625              |
| Venezuela.....           | 49,273                      | -----      | -----      | -----                | <sup>3</sup> 33,095         | 8,916              | -----              | -----                |
| Colombia.....            | 304,302                     | 304,000    | -----      | -----                | 244,627                     | 242,000            | 276,000            | -----                |
| Peru.....                | -----                       | -----      | -----      | -----                | 5,779                       | 3,887              | 5,188              | 7,782                |
| Ecuador.....             | 1,306,000                   | 1,810,000  | 2,519,000  | -----                | 547,364                     | 448,000            | 969,000            | -----                |
| Brazil.....              | 45,601                      | -----      | -----      | -----                | <sup>2</sup> 2,139          | -----              | -----              | -----                |
| Bolivia.....             | <sup>5</sup> 23,691         | -----      | -----      | -----                | <sup>3</sup> 12,328         | -----              | -----              | -----                |
| Paraguay.....            | 241,073                     | 342,000    | 480,000    | -----                | 115,370                     | 150,000            | -----              | -----                |
| Argentina.....           | 667                         | -----      | -----      | -----                | 397                         | -----              | -----              | -----                |
| Guatemala.....           | 130,269                     | 250,065    | -----      | -----                | <sup>6</sup> 22,324         | -----              | -----              | -----                |
| Haiti.....               | -----                       | -----      | -----      | -----                | <sup>2</sup> 351            | -----              | -----              | -----                |
| Dominican Republic.....  | -----                       | -----      | -----      | -----                | 2,030                       | 724                | -----              | -----                |
| Puerto Rico.....         | 10,020                      | 8,401      | -----      | -----                | <sup>3</sup> 774            | -----              | -----              | -----                |
| Salvador.....            | -----                       | -----      | -----      | -----                | 4,288                       | -----              | -----              | -----                |
| British West Indies..... | 16,807                      | -----      | -----      | -----                | <sup>7</sup> 3,300          | 1,121              | 1,000              | -----                |
| Italy.....               | <sup>3</sup> 8,772          | 3,000      | 4,000      | -----                | -----                       | -----              | -----              | -----                |

<sup>1</sup> Preliminary.

<sup>2</sup> Bales of 473 pounds net.

<sup>3</sup> Average for 4 years.

<sup>4</sup> Average for 2 years.

<sup>5</sup> Average for 3 years.

<sup>6</sup> Exports.

<sup>7</sup> Estimate for 1 year.



TABLE 115.—*Cotton: Acreage and production in specified countries, average 1925-26 to 1929-30, annual 1932-33 to 1934-35—Continued*

| Country                                     | Acreage                              |              |              |                      | Production                           |                          |                          |                          |
|---|--------------------------------------|--------------|--------------|----------------------|--------------------------------------|--------------------------|--------------------------|--------------------------|
|   | Average,<br>1925-26<br>to<br>1929-30 | 1932-33      | 1933-34      | 1934-35 <sup>1</sup> | Average,<br>1925-26<br>to<br>1929-30 | 1932-33                  | 1933-34                  | 1934-35 <sup>1</sup>     |
|   | <i>Acres</i>                         | <i>Acres</i> | <i>Acres</i> | <i>Acres</i>         | <i>Bales<sup>2</sup></i>             | <i>Bales<sup>2</sup></i> | <i>Bales<sup>2</sup></i> | <i>Bales<sup>2</sup></i> |
| Yugoslavia.....                             | 1,763                                | 2,251        | —            | —                    | 392                                  | 542                      | —                        | —                        |
| Greece.....                                 | 89,819                               | 50,000       | 71,000       | 109,000              | 15,016                               | 22,000                   | 32,000                   | 50,000                   |
| Bulgaria.....                               | 10,867                               | 20,000       | 49,000       | 82,000               | 3,046                                | 6,005                    | 18,000                   | 29,100                   |
| Malta.....                                  | 993                                  | 67           | —            | —                    | 427                                  | 34                       | —                        | —                        |
| Spain.....                                  | 13,643                               | 20,000       | 19,000       | —                    | 2,974                                | 5,000                    | 9,000                    | —                        |
| Algeria.....                                | 15,138                               | —            | —            | —                    | 6,176                                | —                        | —                        | —                        |
| Morocco (French).....                       | 1,480                                | —            | —            | —                    | 448                                  | —                        | —                        | —                        |
| French West Africa:                         |                                      |              |              |                      |                                      |                          |                          |                          |
| Dahomey.....                                | —                                    | —            | —            | —                    | 6,344                                | 3,000                    | 3,200                    | —                        |
| Ivory Coast.....                            | <sup>3</sup> 149,376                 | —            | —            | —                    | <sup>3</sup> 7,646                   | 6,964                    | —                        | —                        |
| French Guinea.....                          | <sup>3</sup> 18,841                  | —            | —            | —                    | <sup>3</sup> 2,406                   | —                        | —                        | —                        |
| Senegal.....                                | 47,690                               | —            | —            | —                    | 1,695                                | —                        | —                        | —                        |
| French Sudan.....                           | <sup>3</sup> 158,267                 | —            | —            | —                    | 7,947                                | —                        | —                        | —                        |
| Upper Volta.....                            | —                                    | —            | —            | —                    | 5,776                                | —                        | —                        | —                        |
| French Togo.....                            | —                                    | —            | —            | —                    | 7,732                                | —                        | —                        | —                        |
| Nigeria.....                                | —                                    | —            | —            | —                    | <sup>3</sup> 28,846                  | 18,600                   | 18,600                   | —                        |
| French Equatorial Africa.....               | <sup>4</sup> 7,797                   | 124,000      | —            | —                    | <sup>3</sup> 822                     | 13,000                   | 20,800                   | —                        |
| Egypt.....                                  | 1,828,000                            | 1,135,000    | 1,873,000    | 1,798,000            | 1,587,000                            | 1,028,000                | 1,777,000                | 1,617,000                |
| Anglo-Egyptian Sudan.....                   | 269,200                              | 325,000      | 333,000      | 352,000              | 125,547                              | 121,000                  | 135,000                  | —                        |
| Italian Somaliland.....                     | 15,862                               | —            | —            | —                    | 4,005                                | —                        | —                        | —                        |
| Niger Territory.....                        | <sup>3</sup> 18,162                  | —            | —            | —                    | 1,764                                | —                        | —                        | —                        |
| Eritrea.....                                | <sup>3</sup> 6,487                   | 5,869        | 12,000       | —                    | 1,624                                | 784                      | —                        | —                        |
| Gold Coast.....                             | —                                    | —            | —            | —                    | <sup>3</sup> 209                     | —                        | —                        | —                        |
| Belgian Congo.....                          | <sup>3</sup> 24,850                  | —            | —            | —                    | 25,587                               | —                        | —                        | —                        |
| Kenya.....                                  | —                                    | —            | —            | —                    | 1,209                                | 2,542                    | 3,347                    | —                        |
| Uganda.....                                 | 615,441                              | 1,071,521    | 1,091,000    | 1,181,000            | 131,257                              | 247,000                  | 218,000                  | —                        |
| Angola.....                                 | —                                    | —            | —            | —                    | <sup>3</sup> 3,022                   | —                        | —                        | —                        |
| Tanganyika.....                             | —                                    | —            | —            | —                    | 20,537                               | 15,096                   | 23,841                   | —                        |
| Nyasaland.....                              | <sup>3</sup> 23,805                  | 33,840       | —            | —                    | 4,360                                | 4,293                    | —                        | —                        |
| Northern Rhodesia <sup>5</sup> .....        | 2,566                                | —            | —            | —                    | 126                                  | —                        | —                        | —                        |
| Southern Rhodesia.....                      | 16,706                               | —            | —            | —                    | 1,508                                | —                        | —                        | —                        |
| Mozambique.....                             | —                                    | —            | —            | —                    | 9,094                                | —                        | —                        | —                        |
| Union of South Africa.....                  | 64,491                               | —            | —            | —                    | <sup>3</sup> 11,302                  | 1,500                    | 2,186                    | —                        |
| Cyprus.....                                 | 11,342                               | 6,247        | —            | —                    | 2,532                                | 937                      | —                        | —                        |
| Ceylon.....                                 | 1,631                                | —            | —            | —                    | 192                                  | —                        | —                        | —                        |
| Turkey (Asiatic).....                       | 334,230                              | 358,000      | 400,000      | 491,000              | 92,928                               | 28,000                   | 23,098                   | 78,406                   |
| Syria and Lebanon.....                      | 54,977                               | 19,000       | —            | —                    | 9,886                                | 4,000                    | 4,000                    | —                        |
| Union of Soviet Socialist Republics.....    | 1,991,000                            | 5,139,000    | 4,853,000    | 4,843,000            | 1,012,000                            | 1,778,000                | 1,889,000                | —                        |
| Iraq.....                                   | <sup>7</sup> 15,000                  | —            | —            | —                    | 2,977                                | 342                      | —                        | —                        |
| Iran.....                                   | —                                    | —            | —            | —                    | 95,160                               | <sup>10</sup> 100,000    | <sup>10</sup> 100,000    | —                        |
| India.....                                  | 26,192,000                           | 22,483,000   | 23,739,000   | —                    | 4,724,000                            | 3,896,000                | 4,159,000                | —                        |
| China <sup>11</sup> .....                   | 4,480,000                            | 5,630,000    | 6,142,000    | 6,747,000            | 2,069,000                            | 2,261,000                | 2,726,000                | 2,923,000                |
| Japan.....                                  | 2,857                                | —            | —            | —                    | 1,090                                | —                        | —                        | —                        |
| Chosen.....                                 | 495,232                              | 393,000      | 433,000      | 450,000              | 137,593                              | 136,000                  | 147,000                  | —                        |
| Manchuria.....                              | —                                    | —            | —            | —                    | —                                    | —                        | —                        | —                        |
| French Indo-China.....                      | <sup>4</sup> 42,960                  | —            | 141,000      | 198,000              | <sup>4</sup> 7,120                   | 6,685                    | 80,000                   | 100,000                  |
| Netherlands Indies.....                     | 21,708                               | 25,187       | —            | —                    | 4,708                                | 2,958                    | —                        | —                        |
| Siam.....                                   | 8,951                                | —            | —            | —                    | 3,244                                | —                        | —                        | —                        |
| Australia.....                              | 22,895                               | —            | —            | —                    | 7,311                                | 12,232                   | 18,533                   | —                        |
| New Hebrides <sup>6</sup> .....             | —                                    | —            | —            | —                    | 2,505                                | 868                      | —                        | —                        |
| Estimated world total, including China..... | 83,080,000                           | 76,700,000   | 74,400,000   | —                    | 26,720,000                           | 23,700,000               | 26,100,000               | 23,000,000               |

<sup>1</sup> Preliminary.<sup>2</sup> Bales of 473 pounds net.<sup>3</sup> Average for 4 years.<sup>4</sup> Average for 2 years.<sup>5</sup> Average for 3 years.<sup>6</sup> Exports.<sup>7</sup> Production has been discontinued with the exception of a few experimental plots under Government supervision.<sup>8</sup> Includes Swaziland.<sup>9</sup> From an unofficial source.<sup>10</sup> From reports of the Chinese Cotton Statistics Association. Figures represent the crop in the most important cotton Provinces where the commercial crop is grown.

Bureau of Agricultural Economics; from official sources, International Institute of Agriculture and estimates of the Bureau of Agricultural Economics except as noted.

Data for crop year as given at the head of table are for crops harvested between Aug. 1 and July 31.

TABLE 116.—*Cotton: Production, world and selected countries, 1909-10 to 1934-35*

| Crop Year            | Estimated world total excluding China | Estimated world total including China | Production in selected countries |                          |                          |                          |                          |                          | Estimated world total commercial crop <sup>2</sup> |
|----------------------|---------------------------------------|---------------------------------------|----------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|
|                      |                                       |                                       | United States                    | India                    | Egypt                    | China <sup>1</sup>       | Brazil                   | Russia                   |  |
|                      | 1,000 bales <sup>2</sup>              | 1,000 bales <sup>2</sup>              | 1,000 bales <sup>2</sup>         | 1,000 bales <sup>2</sup> | 1,000 bales <sup>2</sup> | 1,000 bales <sup>2</sup> | 1,000 bales <sup>2</sup> | 1,000 bales <sup>2</sup> | 1,000 bales <sup>2</sup>                           |
| 1909-10              | 16,900                                | 10,005                                | 3,998                            | 1,036                    |                          | 324                      |                          |                          | 16,241   |
| 1910-11              | 18,400                                | 11,609                                | 3,254                            | 1,555                    |                          | 357                      |                          |                          | 18,027   |
| 1911-12              | 21,900                                | 15,694                                | 2,730                            | 1,530                    |                          | 360                      |                          |                          | 21,269   |
| 1912-13              | 21,100                                | 13,703                                | 3,702                            | 1,554                    |                          | 418                      |                          |                          | 20,976   |
| 1913-14              | 22,200                                | 14,153                                | 4,239                            | 1,588                    |                          | 477                      |                          |                          | 21,618   |
| 1914-15              | 24,200                                | 16,112                                | 4,359                            | 1,337                    |                          | 465                      |                          |                          | 23,768   |
| 1915-16              | 17,800                                | 11,172                                | 3,128                            | 989                      |                          | 339                      |                          |                          | 17,649   |
| 1916-17              | 18,366                                | 19,900                                | 11,448                           | 3,759                    | 1,048                    | 1,534                    |                          | 1,270                    | 18,092   |
| 1917-18              | 17,608                                | 19,700                                | 11,284                           | 3,393                    | 1,304                    | 2,092                    |                          | 1,512                    | 18,140   |
| 1918-19              | 17,841                                | 20,900                                | 12,018                           | 3,328                    | 999                      | 3,059                    |                          | 1,634                    | 18,755   |
| 1919-20              | 18,782                                | 21,300                                | 11,411                           | 4,853                    | 1,155                    | 2,518                    |                          | 81                       | 20,220   |
| 1920-21              | 19,217                                | 21,100                                | 13,429                           | 3,013                    | 1,251                    | 1,883                    |                          | 476                      | 19,665   |
| 1921-22              | 13,886                                | 15,400                                | 7,945                            | 3,752                    | 902                      | 1,514                    |                          | 504                      | 15,334   |
| 1922-23              | 16,982                                | 19,300                                | 9,755                            | 4,245                    | 1,391                    | 2,318                    |                          | 453                      | 17,926   |
| 1923-24              | 17,707                                | 19,700                                | 10,140                           | 4,320                    | 1,353                    | 1,993                    |                          | 576                      | 19,036   |
| 1924-25              | 22,822                                | 25,000                                | 13,630                           | 5,095                    | 1,507                    | 2,178                    |                          | 793                      | 23,836   |
| 1925-26              | 25,798                                | 27,900                                | 16,105                           | 5,201                    | 1,650                    | 2,102                    |                          | 602                      | 26,678   |
| 1926-27              | 26,658                                | 28,400                                | 17,978                           | 4,205                    | 1,586                    | 1,742                    |                          | 512                      | 27,819   |
| 1927-28              | 22,125                                | 24,000                                | 12,956                           | 4,990                    | 1,261                    | 1,875                    |                          | 509                      | 23,426   |
| 1928-29              | 24,334                                | 26,800                                | 14,477                           | 4,838                    | 1,672                    | 2,466                    |                          | 446                      | 26,628   |
| 1929-30              | 24,384                                | 26,500                                | 14,825                           | 4,387                    | 1,768                    | 2,116                    |                          | 583                      | 26,653   |
| 1930-31              | 23,550                                | 25,800                                | 13,932                           | 4,373                    | 1,715                    | 2,250                    |                          | 471                      | 25,304   |
| 1931-32              | 25,715                                | 27,500                                | 17,095                           | 3,368                    | 1,323                    | 1,785                    |                          | 575                      | 26,329   |
| 1932-33              | 21,439                                | 23,700                                | 13,001                           | 3,896                    | 1,028                    | 2,261                    |                          | 448                      | 23,634   |
| 1933-34              | 23,374                                | 26,100                                | 13,047                           | 4,159                    | 1,777                    | 2,726                    |                          | 969                      | 25,451   |
| 1934-35 <sup>3</sup> | 20,072                                | 23,000                                | 9,731                            | 1,617                    | 2,928                    |                          |                          | 1,889                    |  |

<sup>1</sup> From reports of the Chinese Cotton Statistics Association. Figures represent the crop in the most important cotton-producing Provinces where the commercial crop is grown. Most of the cotton produced in other Provinces is used for home hand-loom consumption.

<sup>2</sup> Figures as reported by the U. S. Bureau of the Census, including the cotton destined to enter commercial channels for factory purposes. Estimates of the commercial crop in China are included.

<sup>3</sup> Bales of 478 pounds net.

<sup>4</sup> American in running bales and foreign in bales of 478 pounds net, beginning with 1922-23. From 1909-10 to 1916-17, inclusive, bales of 500 pounds net, and from 1917-18 to 1921-22 in bales of 478 pounds net.

<sup>5</sup> Preliminary.

Bureau of Agricultural Economics; from official sources, International Institute of Agriculture, and estimates of the Bureau of Agricultural Economics, except as noted.

The crop year is from Aug. 1 to July 31. For the United States prior to 1914 the figures apply to the year beginning Sept. 1.

TABLE 117.—*Cotton: Monthly marketings by farmers, 1924-25 to 1933-34* <sup>1</sup>

| Year         | Percentages of sales during— |              |              |              |              |              |              |              |              |              |              |              |
|--------------|------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|              | Aug.                         | Sept.        | Oct.         | Nov.         | Dec.         | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | July         |
|              | Per-<br>cent                 | Per-<br>cent | Per-<br>cent | Per-<br>cent | Per-<br>cent | Per-<br>cent | Per-<br>cent | Per-<br>cent | Per-<br>cent | Per-<br>cent | Per-<br>cent | Per-<br>cent |
| 1924-25..... | 3.3                          | 15.2         | 25.2         | 22.3         | 14.5         | 7.0          | 5.3          | 3.4          | 1.6          | 1.0          | 1.6          | 100.0        |
| 1925-26..... | 6.5                          | 19.3         | 23.1         | 17.6         | 12.0         | 6.5          | 4.2          | 3.1          | 2.3          | 1.7          | 2.1          | 100.0        |
| 1926-27..... | 2.7                          | 15.2         | 22.0         | 19.5         | 12.5         | 6.3          | 5.8          | 5.0          | 3.8          | 3.1          | 2.5          | 100.0        |
| 1927-28..... | 6.6                          | 20.0         | 23.8         | 17.3         | 9.7          | 4.2          | 4.0          | 4.2          | 3.1          | 2.7          | 2.3          | 100.0        |
| 1928-29..... | 4.6                          | 15.6         | 24.8         | 20.8         | 12.8         | 5.4          | 4.0          | 4.5          | 3.8          | 1.6          | 1.9          | 100.0        |
| 1929-30..... | 5.7                          | 18.2         | 23.3         | 20.6         | 11.8         | 4.2          | 2.8          | 2.4          | 1.8          | 1.6          | 1.8          | 100.0        |
| 1930-31..... | 7.7                          | 19.0         | 25.6         | 20.3         | 11.7         | 3.9          | 2.8          | 2.4          | 1.8          | 1.6          | 1.8          | 100.0        |
| 1931-32..... | 2.9                          | 13.4         | 23.0         | 20.5         | 13.6         | 6.3          | 5.9          | 5.2          | 2.6          | 1.7          | 1.8          | 100.0        |
| 1932-33..... | 4.1                          | 14.3         | 23.0         | 19.9         | 10.9         | 4.0          | 3.3          | 2.4          | 4.9          | 5.7          | 3.9          | 100.0        |
| 1933-34..... | 6.5                          | 17.4         | 22.6         | 20.2         | 10.7         | 3.5          | 3.5          | 4.3          | 2.6          | 1.6          | 3.6          | 100.0        |

<sup>1</sup> As reported by about 7,500 cotton growers, supplemented by records of State weighers, cooperative associations, and cotton dealers.

Bureau of Agricultural Economics. Data for earlier years in 1928 Yearbook, table 256.

TABLE 118.—*Cotton: Supply and distribution, United States, 1913-14 to 1933-34*

| Year beginning August | Supply                          |             |                         |             |              | Distribution |             |             |                               |             |                                 |
|-----------------------|---------------------------------|-------------|-------------------------|-------------|--------------|--------------|-------------|-------------|-------------------------------|-------------|---------------------------------|
|                       | Carry-over from previous season |             | Production <sup>1</sup> | Imports     | Total supply | Consumption  |             | Exports     | Stocks on hand at end of year |             | Total distribution <sup>2</sup> |
|                       | Foreign                         | Total       |                         |             |              | Foreign      | Total       |             | Foreign                       | Total       |                                 |
|                       | 1,000 bales                     | 1,000 bales | 1,000 bales             | 1,000 bales | 1,000 bales  | 1,000 bales  | 1,000 bales | 1,000 bales | 1,000 bales                   | 1,000 bales | 1,000 bales                     |
| 1913-14.....          | 83                              | 1,511       | 13,983                  | 261         | 15,755       | 194          | 5,577       | 9,142       | 73                            | 1,366       | 16,085                          |
| 1914-15.....          | 73                              | 1,366       | 15,906                  | 352         | 17,654       | 222          | 5,597       | 8,323       | 145                           | 3,936       | 17,556                          |
| 1915-16.....          | 145                             | 3,936       | 11,068                  | 438         | 15,442       | 317          | 6,398       | 5,896       | 212                           | 3,140       | 15,434                          |
| 1916-17.....          | 212                             | 2,140       | 11,364                  | 292         | 14,796       | 318          | 6,789       | 5,300       | 143                           | 2,720       | 14,809                          |
| 1917-18.....          | 143                             | 2,720       | 11,248                  | 221         | 14,189       | 184          | 6,566       | 4,288       | 111                           | 3,450       | 14,304                          |
| 1918-19.....          | 111                             | 3,450       | 11,906                  | 202         | 15,558       | 176          | 5,766       | 5,592       | 83                            | 4,287       | 15,645                          |
| 1919-20.....          | 83                              | 4,287       | 11,326                  | 700         | 16,313       | 417          | 6,420       | 6,545       | 284                           | 3,563       | 16,528                          |
| 1920-21.....          | 284                             | 3,563       | 13,271                  | 226         | 17,060       | 216          | 4,893       | 5,745       | 174                           | 6,534       | 17,172                          |
| 1921-22.....          | 174                             | 6,534       | 7,978                   | 363         | 14,875       | 297          | 5,910       | 6,184       | 167                           | 2,832       | 14,926                          |
| 1922-23.....          | 167                             | 2,832       | 9,729                   | 470         | 13,031       | 344          | 6,666       | 4,823       | 196                           | 2,325       | 13,814                          |
| 1923-24.....          | 196                             | 2,325       | 10,171                  | 292         | 12,788       | 328          | 5,681       | 5,656       | 116                           | 1,556       | 12,893                          |
| 1924-25.....          | 116                             | 1,556       | 13,639                  | 313         | 15,508       | 276          | 6,193       | 8,005       | 106                           | 1,610       | 15,808                          |
| 1925-26.....          | 106                             | 1,610       | 16,123                  | 326         | 18,059       | 280          | 6,456       | 8,051       | 129                           | 3,543       | 18,050                          |
| 1926-27.....          | 129                             | 3,543       | 17,755                  | 401         | 21,699       | 309          | 7,190       | 10,927      | 99                            | 3,762       | 21,879                          |
| 1927-28.....          | 99                              | 3,762       | 12,783                  | 338         | 16,883       | 299          | 6,834       | 7,540       | 111                           | 2,536       | 16,910                          |
| 1928-29.....          | 111                             | 2,536       | 14,297                  | 458         | 17,291       | 313          | 7,091       | 8,044       | 182                           | 2,312       | 17,447                          |
| 1929-30.....          | 182                             | 2,312       | 14,548                  | 378         | 17,238       | 302          | 6,106       | 6,690       | 209                           | 4,530       | 17,326                          |
| 1930-31.....          | 209                             | 4,530       | 13,756                  | 108         | 18,394       | 179          | 5,263       | 6,780       | 107                           | 6,370       | 18,393                          |
| 1931-32.....          | 107                             | 6,370       | 16,629                  | 132         | 23,131       | 122          | 4,866       | 8,708       | 97                            | 9,678       | 23,252                          |
| 1932-33.....          | 97                              | 9,678       | 12,710                  | 130         | 22,518       | 133          | 6,137       | 8,419       | 84                            | 8,165       | 22,721                          |
| 1933-34.....          | 84                              | 8,165       | 12,664                  | 148         | 20,977       | 148          | 5,700       | 7,534       | 95                            | 7,744       | 20,978                          |

<sup>1</sup> Production is expressed in running bales in this table and therefore the figures are not the same as those shown in tables where bales of 500 pounds gross weight are used. Consumption and carry-over statistics for American cotton are available only in running bales, and therefore production and exports are shown in running bales.

<sup>2</sup> Total distribution usually is greater than total supply due principally to the inclusion, in all distribution items, of the "city crop", which consists of rebaled samples and pickings from cotton damaged by fire and weather.

Bureau of Agricultural Economics; compiled from reports of the Bureau of the Census.

Quantities are in running bales, round bales counted as half bales and foreign in 500-pound bales.

TABLE 119.—*Cotton: Consumption by mills, United States, 1925-26 to 1934-35*

| Year                       | Aug.        | Sept.       | Oct.        | Nov.        | Dec.        | Jan.        | Feb.        | Mar.        | Apr.        | May         | June        | July        | Total       |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                            | 1,000 bales | 1,000 bales | 1,000 bales | 1,000 bales | 1,000 bales | 1,000 bales | 1,000 bales | 1,000 bales | 1,000 bales | 1,000 bales | 1,000 bales | 1,000 bales | 1,000 bales |
| 1925-26.....               | 451         | 483         | 544         | 544         | 576         | 582         | 565         | 636         | 578         | 516         | 519         | 462         | 6,456       |
| 1926-27.....               | 500         | 571         | 588         | 584         | 603         | 603         | 590         | 693         | 618         | 630         | 660         | 570         | 7,190       |
| 1927-28.....               | 634         | 628         | 614         | 627         | 539         | 536         | 573         | 581         | 525         | 577         | 510         | 440         | 6,834       |
| 1928-29.....               | 526         | 492         | 616         | 611         | 533         | 668         | 595         | 632         | 632         | 669         | 570         | 547         | 7,091       |
| 1929-30.....               | 559         | 546         | 640         | 541         | 453         | 576         | 494         | 508         | 532         | 473         | 405         | 379         | 6,106       |
| 1930-31.....               | 353         | 393         | 443         | 415         | 406         | 450         | 433         | 491         | 509         | 465         | 454         | 451         | 5,263       |
| 1931-32.....               | 425         | 464         | 461         | 425         | 415         | 435         | 451         | 489         | 367         | 332         | 323         | 279         | 4,886       |
| 1932-33.....               | 404         | 493         | 502         | 503         | 440         | 470         | 441         | 496         | 470         | 620         | 698         | 600         | 6,137       |
| 1933-34.....               | 589         | 499         | 504         | 475         | 348         | 508         | 478         | 544         | 513         | 519         | 363         | 360         | 5,700       |
| 1934-35 <sup>1</sup> ..... | 421         | 296         | 520         | 477         | 414         | 547         | 478         | 481         | 463         |             |             |             |             |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; compiled from reports of the Bureau of the Census. Data for earlier years in 1928 Yearbook, table 264.

Quantities are in running bales, round counted as half bales and foreign in 500-pound bales.

TABLE 120.—Cotton: Grade, staple length, and tenderability of crop and carry-over, United States, 1930-31 to 1933-34

| Item                             | Crop           |                |                |                | Carry-over Aug. 1 <sup>1</sup> |                |                |                |                |
|----------------------------------|----------------|----------------|----------------|----------------|--------------------------------|----------------|----------------|----------------|----------------|
|                                  | 1930-31        | 1931-32        | 1932-33        | 1933-34        | 1930                           | 1931           | 1932           | 1933           | 1934           |
|                                  | 1,000<br>bales | 1,000<br>bales | 1,000<br>bales | 1,000<br>bales | 1,000<br>bales                 | 1,000<br>bales | 1,000<br>bales | 1,000<br>bales | 1,000<br>bales |
| Total <sup>2</sup> .....         | 13,755.5       | 16,628.9       | 12,709.6       | 12,660.0       | 4,321.7                        | 6,262.7        | 9,576.8        | 8,079.5        | 7,645.1        |
| Total American upland.....       | 13,732.2       | 16,615.2       | 12,701.3       | 12,650.3       | 4,313.6                        | 6,246.0        | 9,560.3        | 8,069.7        | 7,638.1        |
| Total American-Egyptian.....     | 23.3           | 13.7           | 8.3            | 9.7            | 8.1                            | 16.7           | 16.5           | 9.8            | 7.0            |
| Grade (American upland):         |                |                |                |                |                                |                |                |                |                |
| Extra White:                     |                |                |                |                |                                |                |                |                |                |
| Above Good Middling.....         | 1.0            | .6             | 1.8            | .4             | .3                             | —              | —              | .1             | .3             |
| Good Middling.....               | 123.1          | 76.7           | 106.9          | 272.7          | 24.8                           | 30.4           | 33.3           | 21.7           | 157.7          |
| Strict Middling.....             | 214.4          | 174.2          | 132.8          | 597.5          | 29.3                           | 24.6           | 40.4           | 32.1           | 821.0          |
| Middling.....                    | 107.6          | 88.1           | 88.2           | 422.7          | 15.4                           | 16.8           | 19.0           | 34.2           | 1,128.1        |
| Strict Low Middling.....         | 31.1           | 62.2           | 99.6           | 187.2          | 5.9                            | 6.6            | 8.9            | 32.2           | 460.7          |
| Low Middling.....                | 4.8            | 29.7           | 28.9           | 41.2           | 1.4                            | .9             | 2.5            | 14.1           | 81.4           |
| Below Low Middling.....          | 18.6           | 4.3            | 1.8            | .8             | .5                             | .1             | .1             | .9             | 4.1            |
| White:                           |                |                |                |                |                                |                |                |                |                |
| Middling Fair.....               | —              | —              | —              | —              | —                              | —              | —              | —              | —              |
| Strict Good Middling.....        | 13.0           | 10.9           | 1.2            | 2.2            | 3.6                            | 3.2            | 3.2            | 2.2            | 1.8            |
| Good Middling.....               | 892.3          | 940.0          | 251.3          | 273.6          | 159.7                          | 219.9          | 454.7          | 202.1          | 125.2          |
| Strict Middling.....             | 4,364.0        | 5,873.4        | 3,147.0        | 2,487.3        | 872.0                          | 1,536.3        | 3,183.5        | 1,931.7        | 1,079.4        |
| Middling.....                    | 4,211.7        | 5,233.2        | 4,474.5        | 2,950.5        | 1,279.0                        | 2,077.8        | 3,292.2        | 2,801.6        | 1,438.7        |
| Strict Low Middling.....         | 1,749.7        | 1,759.2        | 1,569.2        | 1,135.2        | 583.0                          | 928.3          | 1,083.3        | 1,210.1        | 636.5          |
| Low Middling.....                | 576.9          | 640.3          | 330.3          | 235.9          | 286.8                          | 273.9          | 243.1          | 255.0          | 171.9          |
| Strict Good Ordinary.....        | 114.6          | 421.9          | 116.3          | 51.8           | 159.1                          | 71.4           | 148.6          | 144.7          | 72.5           |
| Good Ordinary.....               | 20.0           | 160.8          | 55.5           | 10.7           | 61.0                           | 21.3           | 98.5           | 82.6           | 51.8           |
| Spotted:                         |                |                |                |                |                                |                |                |                |                |
| Good Middling.....               | 147.2          | 115.3          | 193.6          | 482.4          | 32.5                           | 93.1           | 102.4          | 102.6          | 111.9          |
| Strict Middling.....             | 557.0          | 428.5          | 1,054.0        | 2,138.0        | 160.6                          | 383.0          | 392.3          | 547.3          | 478.1          |
| Middling.....                    | 335.2          | 247.9          | 673.0          | 1,030.5        | 210.1                          | 348.2          | 244.3          | 385.9          | 378.8          |
| Strict Low Middling.....         | 143.7          | 185.2          | 217.5          | 220.8          | 136.6                          | 95.3           | 59.0           | 101.3          | 112.5          |
| Low Middling.....                | 31.2           | 71.3           | 78.8           | 55.5           | 63.6                           | 27.1           | 31.4           | 56.8           | 57.5           |
| Yellow Tinged:                   |                |                |                |                |                                |                |                |                |                |
| Strict Good Middling.....        | .2             | —              | —              | —              | —                              | .1             | .1             | —              | .2             |
| Good Middling.....               | 7.4            | 1.6            | 2.7            | 4.0            | 2.6                            | 4.9            | 3.2            | 2.7            | 3.6            |
| Strict Middling.....             | 20.7           | 4.5            | 10.7           | 7.7            | 16.6                           | 18.3           | 16.5           | 14.2           | 22.9           |
| Middling.....                    | 14.9           | 7.3            | 9.0            | 6.4            | 38.4                           | 21.2           | 19.5           | 16.0           | 27.5           |
| Strict Low Middling.....         | 10.1           | 8.1            | 9.7            | 2.2            | 38.5                           | 11.5           | 11.3           | 8.3            | 45.4           |
| Low Middling.....                | 2.3            | 2.4            | 1.7            | 1.2            | 19.9                           | 5.5            | 4.9            | 4.0            | 35.3           |
| Light Yellow Stained:            |                |                |                |                |                                |                |                |                |                |
| Good Middling.....               | —              | .1             | .1             | .2             | .1                             | .1             | .1             | .1             | .2             |
| Strict Middling.....             | .6             | .2             | .1             | .1             | 1.4                            | .4             | .2             | .2             | .1             |
| Middling.....                    | 1.2            | .4             | .1             | .2             | 3.7                            | 1.1            | .5             | .2             | .2             |
| Yellow Stained:                  |                |                |                |                |                                |                |                |                |                |
| Good Middling.....               | —              | —              | —              | .1             | —                              | —              | —              | —              | .1             |
| Strict Middling.....             | .2             | —              | —              | .1             | .6                             | .4             | .4             | .1             | .4             |
| Middling.....                    | .4             | .1             | .1             | —              | 6.4                            | 1.6            | .9             | .1             | 1.8            |
| Gray:                            |                |                |                |                |                                |                |                |                |                |
| Good Middling.....               | .4             | .5             | 1.2            | —              | —                              | .1             | .4             | .2             | .2             |
| Strict Middling.....             | 3.2            | 6.9            | 5.9            | 1.8            | 1.0                            | .7             | 2.1            | 2.1            | 2.7            |
| Middling.....                    | 1.0            | 5.1            | 3.0            | 1.1            | 1.0                            | .6             | 2.1            | 1.7            | 2.7            |
| Blue Stained:                    |                |                |                |                |                                |                |                |                |                |
| Good Middling.....               | .1             | —              | —              | —              | .1                             | —              | —              | —              | .2             |
| Strict Middling.....             | —              | .1             | —              | .1             | —                              | —              | —              | —              | .3             |
| Middling.....                    | .2             | —              | —              | —              | .6                             | .2             | .2             | —              | .8             |
| No grade <sup>3</sup> .....      | 12.2           | 54.2           | 34.8           | 28.2           | 97.5                           | 21.0           | 57.2           | 60.6           | 74.6           |
| Staple length (American upland): |                |                |                |                |                                |                |                |                |                |
| Shorter than 1/4 inch.....       | 1,829.2        | 1,019.5        | 837.7          | 534.9          | 446.8                          | 463.2          | 298.3          | 188.4          | 233.4          |
| 3/4 and 7/8 inch.....            | 5,327.7        | 6,593.3        | 4,786.5        | 4,486.1        | 1,445.8                        | 2,615.7        | 3,392.6        | 2,503.6        | 2,534.1        |
| 1 1/4 and 1 1/2 inch.....        | 3,421.6        | 4,511.9        | 3,671.0        | 3,997.5        | 825.4                          | 1,528.2        | 2,704.0        | 2,199.3        | 2,112.9        |
| 1 3/4 and 1 7/8 inch.....        | 1,725.9        | 2,557.1        | 1,822.0        | 2,020.3        | 783.0                          | 849.2          | 1,657.6        | 1,774.6        | 1,477.4        |
| 1 7/8 and 1 3/4 inches.....      | 970.9          | 1,067.8        | 871.8          | 820.0          | 389.3                          | 414.8          | 754.5          | 671.7          | 615.6          |
| 1 3/4 and 1 1/2 inches.....      | 393.3          | 590.0          | 622.1          | 640.7          | 283.4                          | 260.5          | 546.7          | 562.9          | 529.2          |
| 1 1/4 and 1 1/4 inches.....      | 60.8           | 224.6          | 84.5           | 144.7          | 115.8                          | 89.7           | 174.0          | 143.0          | 111.6          |
| 1 1/4 inches and longer.....     | 2.8            | 31.0           | 5.7            | 6.1            | 24.3                           | 15.7           | 32.6           | 25.6           | 23.9           |
| Tenderability: <sup>4</sup>      |                |                |                |                |                                |                |                |                |                |
| Total tenderable.....            | 11,623.2       | 14,833.9       | 11,489.1       | 11,785.8       | 3,416.3                        | 5,543.3        | 8,882.7        | 7,437.4        | 6,969.8        |
| Total untenderable.....          | 2,109.0        | 1,795.0        | 1,212.2        | 864.5          | 897.3                          | 702.7          | 677.6          | 632.3          | 668.3          |

<sup>1</sup> Carry-over of foreign cotton not included (see table 118).<sup>2</sup> Report of Bureau of the Census.<sup>3</sup> Includes bales not otherwise classified above.<sup>4</sup> According to sec. 5, United States Cotton Futures Act.

Bureau of Agricultural Economics; see Statistical Bulletins 40 and 47 and subsequent reports for details.

TABLE 121.—*Cotton: Mill consumption of American and other growths in the world, United States, and foreign countries, 1913-14 to 1933-34*

| Year beginning August <sup>1</sup> | World                           |                                 |                                 | United States                   |                                 |                                 | Foreign countries               |                                 |                                 |
|------------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
|                                    | All growths                     | Amer-ican <sup>2</sup>          | Other growths                   | All growths                     | Amer-ican <sup>2</sup>          | Other growths                   | All growths                     | Amer-ican <sup>2</sup>          | Other growths                   |
|                                    | <i>1,000 bales <sup>3</sup></i> | <i>1,000 bales <sup>3</sup></i> | <i>1,000 bales <sup>3</sup></i> | <i>1,000 bales <sup>3</sup></i> | <i>1,000 bales <sup>3</sup></i> | <i>1,000 bales <sup>3</sup></i> | <i>1,000 bales <sup>3</sup></i> | <i>1,000 bales <sup>3</sup></i> | <i>1,000 bales <sup>3</sup></i> |
| 1913-14.....                       | 22,200                          | 13,825                          | 8,375                           | 5,577                           | 5,383                           | 194                             | 16,623                          | 8,442                           | 8,181                           |
| 1914-15.....                       | 20,671                          | 13,249                          | 7,422                           | 5,597                           | 5,375                           | 222                             | 15,074                          | 7,874                           | 7,200                           |
| 1915-16.....                       | 21,978                          | 13,039                          | 8,939                           | 6,388                           | 6,081                           | 317                             | 15,580                          | 6,953                           | 8,622                           |
| 1916-17.....                       | 21,109                          | 12,561                          | 8,548                           | 6,789                           | 6,470                           | 319                             | 14,320                          | 6,091                           | 8,229                           |
| 1917-18.....                       | 18,516                          | 10,871                          | 7,645                           | 6,568                           | 6,382                           | 184                             | 11,950                          | 4,489                           | 7,461                           |
| 1918-19.....                       | 16,705                          | 9,909                           | 6,796                           | 5,766                           | 5,590                           | 176                             | 10,939                          | 4,319                           | 6,620                           |
| 1919-20.....                       | 19,300                          | 11,898                          | 7,402                           | 6,420                           | 6,003                           | 417                             | 12,880                          | 5,895                           | 6,985                           |
| 1920-21.....                       | 16,905                          | 10,268                          | 6,637                           | 4,893                           | 4,677                           | 216                             | 12,012                          | 5,591                           | 6,421                           |
| 1921-22.....                       | 19,990                          | 12,209                          | 7,781                           | 5,910                           | 5,613                           | 297                             | 14,080                          | 6,596                           | 7,484                           |
| 1922-23.....                       | 21,325                          | 12,449                          | 8,876                           | 6,668                           | 6,322                           | 344                             | 14,659                          | 6,124                           | 8,535                           |
| 1923-24.....                       | 19,982                          | 10,917                          | 9,065                           | 5,081                           | 5,353                           | 328                             | 14,301                          | 5,564                           | 8,737                           |
| 1924-25.....                       | 22,642                          | 13,311                          | 9,331                           | 6,193                           | 5,917                           | 276                             | 16,449                          | 7,394                           | 9,055                           |
| 1925-26.....                       | 23,930                          | 14,010                          | 9,920                           | 6,456                           | 6,176                           | 280                             | 17,474                          | 7,834                           | 9,640                           |
| 1926-27.....                       | 25,869                          | 15,748                          | 10,121                          | 7,190                           | 6,880                           | 310                             | 18,679                          | 8,868                           | 9,811                           |
| 1927-28.....                       | 25,285                          | 15,576                          | 9,709                           | 6,834                           | 6,535                           | 299                             | 18,451                          | 9,041                           | 9,410                           |
| 1928-29.....                       | 25,782                          | 15,226                          | 10,556                          | 7,091                           | 6,778                           | 313                             | 18,691                          | 8,448                           | 10,243                          |
| 1929-30.....                       | 24,873                          | 13,021                          | 11,857                          | 6,106                           | 5,803                           | 303                             | 18,772                          | 7,218                           | 11,554                          |
| 1930-31.....                       | 22,402                          | 11,113                          | 11,289                          | 5,263                           | 5,084                           | 179                             | 17,139                          | 6,029                           | 11,110                          |
| 1931-32.....                       | 22,896                          | 12,506                          | 10,390                          | 4,866                           | 4,744                           | 122                             | 18,030                          | 7,762                           | 10,268                          |
| 1932-33.....                       | 24,986                          | 14,405                          | 10,581                          | 6,137                           | 6,004                           | 133                             | 18,849                          | 8,401                           | 10,448                          |
| 1933-34.....                       | 25,324                          | 13,680                          | 11,644                          | 5,700                           | 5,552                           | 148                             | 19,624                          | 8,127                           | 11,497                          |

<sup>1</sup> Year beginning Aug. 1 except 1913, which is the year beginning Sept. 1.<sup>2</sup> "American" cotton means cotton which is grown in the United States.<sup>3</sup> American in running bales and other growths in bales of 478 pounds net. Prior to 1919-20 the quantities given for world consumption of all growths were reported in bales of 500 pounds net and have been converted to equivalent 478-pound bales.

Bureau of Agricultural Economics; compiled from reports of the Bureau of the Census except consumption figures for American cotton in foreign countries, which are compiled from the Cotton Yearbook of the New York Cotton Exchange, 1934, p. 37.

The figures for the consumption of "other growths" in the world and in foreign countries were computed by deduction.

TABLE 122.—*Cotton: Average price per pound received by producers, United States, 1925-26 to 1934-35*

| Year         | Aug. 15      | Sept. 15     | Oct. 15      | Nov. 15      | Dec. 15      | Jan. 15      | Feb. 15      | Mar. 15      | Apr. 15      | May 15       | June 15      | July 15      | Weighted average |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------------------|
|              | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i>     |
| 1925-26..... | 23.4         | 22.5         | 21.5         | 18.1         | 17.4         | 17.4         | 17.6         | 16.5         | 16.6         | 16.0         | 16.1         | 15.4         | 19.6             |
| 1926-27..... | 16.1         | 16.8         | 11.7         | 11.0         | 10.0         | 10.6         | 11.5         | 12.5         | 12.3         | 13.9         | 14.8         | 15.5         | 12.5             |
| 1927-28..... | 17.1         | 22.5         | 21.0         | 20.0         | 18.7         | 18.6         | 17.0         | 17.8         | 18.7         | 20.1         | 19.7         | 21.0         | 20.2             |
| 1928-29..... | 18.8         | 17.6         | 18.1         | 17.8         | 18.0         | 17.9         | 18.0         | 18.8         | 18.5         | 18.0         | 17.9         | 17.8         | 18.0             |
| 1929-30..... | 18.0         | 18.2         | 17.5         | 16.2         | 16.0         | 15.8         | 14.8         | 13.8         | 14.7         | 14.5         | 14.0         | 11.9         | 16.8             |
| 1930-31..... | 11.4         | 9.9          | 9.2          | 9.6          | 8.7          | 8.6          | 9.1          | 9.6          | 9.3          | 8.8          | 7.7          | 8.5          | 9.5              |
| 1931-32..... | 6.3          | 5.9          | 5.3          | 6.1          | 5.5          | 5.6          | 5.8          | 6.2          | 5.7          | 5.2          | 4.6          | 5.1          | 5.7              |
| 1932-33..... | 6.5          | 7.2          | 6.4          | 5.9          | 5.4          | 5.6          | 5.5          | 6.1          | 6.1          | 8.2          | 8.7          | 10.6         | 6.5              |
| 1933-34..... | 8.8          | 8.8          | 9.0          | 9.6          | 9.6          | 10.3         | 11.7         | 11.6         | 11.0         | 11.6         | 12.3         | 12.3         | 9.7              |
| 1934-35..... | 13.1         | 13.1         | 12.5         | 12.3         | 12.4         | -----        | -----        | -----        | -----        | -----        | -----        | -----        | 12.6             |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics. Based upon returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 Yearbook, table 266.

TABLE 123.—*Cotton, Middling, 3/8-inch: Average spot price per pound at 10 designated markets, 1915-16 to 1933-34*

| Year beginning August— | Norfolk      | Augusta      | Savannah     | Montgomery   | New Orleans  | Memphis      | Little Rock  | Dallas       | Houston      | Galveston    | Average of 10 markets <sup>1</sup> |
|------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------------------------------------|
|                        | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i>                       |
| 1915-16.....           | 11.62        | 11.56        | 11.72        | 11.37        | 11.68        | 11.83        | 11.54        | 11.51        | 12.00        | 12.06        | 11.72                              |
| 1916-17.....           | 18.85        | 19.07        | 19.54        | 18.86        | 18.84        | 19.08        | 18.89        | 18.43        | 18.92        | 19.06        | 18.96                              |
| 1917-18.....           | 28.82        | 29.01        | 29.29        | 29.15        | 28.96        | 29.49        | 29.05        | 28.47        | 28.85        | 29.06        | 29.02                              |
| 1918-19.....           | 28.74        | 29.21        | 30.02        | 29.28        | 29.87        | 30.11        | 29.75        | 29.64        | 30.26        | 30.78        | 29.76                              |
| 1919-20.....           | 37.32        | 37.93        | 38.22        | 37.52        | 38.21        | 38.70        | 38.38        | 38.95        | 38.78        | 39.41        | 38.34                              |
| 1920-21.....           | 16.92        | 16.62        | 17.20        | 16.37        | 16.55        | 17.20        | 16.69        | 15.79        | 16.33        | 16.89        | 16.66                              |
| 1921-22.....           | 18.00        | 17.97        | 18.12        | 17.48        | 17.92        | 18.38        | 18.12        | 17.84        | 18.46        | 18.64        | 18.09                              |
| 1922-23.....           | 25.87        | 25.92        | 25.87        | 25.49        | 25.94        | 26.21        | 25.78        | 25.31        | 25.94        | 26.03        | 25.83                              |
| 1923-24.....           | 30.15        | 30.06        | 30.00        | 29.82        | 30.33        | 30.42        | 30.22        | 29.66        | 30.28        | 30.48        | 30.14                              |
| 1924-25.....           | 24.38        | 24.24        | 24.27        | 23.71        | 24.21        | 24.19        | 24.27        | 23.91        | 24.50        | 24.57        | 24.22                              |
| 1925-26.....           | 19.78        | 19.53        | 19.61        | 18.98        | 19.71        | 19.77        | 19.70        | 19.64        | 20.00        | 20.12        | 19.68                              |
| 1926-27.....           | 14.56        | 14.37        | 14.46        | 13.85        | 14.74        | 14.31        | 14.29        | 13.91        | 14.73        | 14.79        | 14.40                              |
| 1927-28.....           | 20.17        | 20.09        | 20.06        | 19.46        | 19.98        | 19.44        | 19.31        | 19.04        | 19.76        | 19.84        | 19.72                              |
| 1928-29.....           | 19.07        | 18.95        | 18.92        | 18.42        | 18.98        | 18.31        | 18.29        | 18.19        | 18.74        | 18.82        | 18.67                              |
| 1929-30.....           | 16.34        | 15.97        | 15.95        | 15.41        | 16.16        | 15.43        | 15.33        | 15.32        | 15.89        | 16.00        | 15.79                              |
| 1930-31.....           | 10.11        | 9.73         | 9.81         | 9.28         | 10.08        | 9.22         | 9.10         | 9.19         | 9.74         | 9.82         | 9.61                               |
| 1931-32.....           | 6.23         | 6.08         | 6.09         | 5.69         | 6.20         | 5.59         | 5.48         | 5.57         | 5.93         | 6.03         | 5.89                               |
| 1932-33.....           | 7.38         | 7.37         | 7.25         | 6.98         | 7.26         | 7.04         | 6.96         | 6.84         | 7.18         | 7.18         | 7.15                               |
| 1933-34.....           | 10.99        | 10.99        | 10.91        | 10.64        | 10.92        | 10.66        | 10.60        | 10.56        | 10.90        | 10.90        | 10.81                              |

<sup>1</sup> Averages of monthly averages of 10 markets.<sup>2</sup> 11 months. Comparable data not available for February.<sup>3</sup> Excludes Savannah for February.

Bureau of Agricultural Economics; compiled from the daily reports to the Bureau from the cotton exchanges of the various markets.

TABLE 124.—*Cotton, Middling, 3/8-inch: Average spot price per pound at New Orleans and 10 markets combined, 1919-20 to 1934-35*

| Market and year             | Aug.         | Sept.        | Oct.         | Nov.         | Dec.         | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | July         | Average      |
|-----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| <b>New Orleans:</b>         | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> |
| 1919-20.....                | 31.58        | 30.38        | 35.28        | 39.58        | 39.89        | 40.26        | 39.59        | 40.69        | 41.41        | 40.51        | 40.49        | 39.41        | 38.21        |
| 1920-21.....                | 34.03        | 27.48        | 20.95        | 17.65        | 14.59        | 14.53        | 12.85        | 11.08        | 11.17        | 11.80        | 21.03        | 11.49        | 16.55        |
| 1921-22.....                | 12.78        | 19.35        | 18.99        | 17.27        | 17.16        | 16.53        | 16.36        | 16.74        | 16.80        | 19.31        | 21.68        | 22.01        | 17.92        |
| 1922-23.....                | 21.55        | 20.74        | 22.05        | 25.34        | 25.48        | 27.51        | 28.78        | 30.43        | 28.42        | 28.63        | 28.61        | 25.73        | 25.94        |
| 1923-24.....                | 24.22        | 27.71        | 29.18        | 33.63        | 34.88        | 33.93        | 31.90        | 28.74        | 30.41        | 30.70        | 28.61        | 29.23        | 30.33        |
| 1924-25.....                | 28.65        | 22.79        | 23.48        | 23.95        | 23.66        | 23.66        | 24.51        | 25.52        | 24.52        | 25.54        | 24.07        | 24.05        | 24.21        |
| 1925-26.....                | 23.07        | 23.09        | 20.86        | 19.82        | 19.27        | 20.26        | 19.83        | 18.35        | 18.11        | 18.06        | 17.64        | 18.24        | 19.71        |
| 1926-27.....                | 18.01        | 16.14        | 12.68        | 12.52        | 12.22        | 13.17        | 13.82        | 14.10        | 14.42        | 15.68        | 16.47        | 17.63        | 14.74        |
| 1927-28.....                | 19.36        | 21.53        | 20.73        | 19.99        | 19.26        | 18.72        | 17.90        | 18.94        | 20.07        | 20.77        | 21.10        | 21.45        | 19.98        |
| 1928-29.....                | 19.00        | 17.04        | 18.79        | 19.00        | 19.36        | 19.14        | 19.07        | 19.97        | 19.23        | 18.74        | 18.51        | 18.73        | 18.96        |
| 1929-30.....                | 18.57        | 18.45        | 18.08        | 17.17        | 17.04        | 16.84        | 15.25        | 14.87        | 15.79        | 15.80        | 13.55        | 12.65        | 16.16        |
| 1930-31.....                | 11.50        | 10.58        | 10.40        | 10.63        | 9.65         | 9.87         | 10.63        | 10.59        | 9.95         | 9.08         | 8.68         | 9.10         | 10.08        |
| 1931-32.....                | 7.02         | 6.20         | 6.06         | 6.32         | 6.19         | 6.50         | 6.69         | 6.74         | 6.12         | 5.70         | 5.18         | 5.73         | 6.20         |
| 1932-33.....                | 7.29         | 6.58         | 6.51         | 6.12         | 5.84         | 6.12         | 5.92         | 6.32         | 6.88         | 6.88         | 6.83         | 10.08        | 7.26         |
| 1933-34.....                | 9.48         | 9.38         | 9.29         | 9.74         | 9.94         | 10.95        | 12.07        | 12.16        | 11.81        | 11.99        | 12.13        | 12.75        | 10.92        |
| 1934-35.....                | 13.28        | 13.01        | 12.58        | 12.59        | 12.78        | 12.70        | 12.58        | 11.57        |              |              |              |              |              |
| <b>10 markets combined:</b> |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1919-20.....                | 31.50        | 30.30        | 35.44        | 39.59        | 39.70        | 40.46        | 39.49        | 40.68        | 41.74        | 41.01        | 40.53        | 39.58        | 38.34        |
| 1920-21.....                | 34.78        | 28.24        | 21.33        | 17.83        | 14.63        | 14.42        | 12.68        | 11.19        | 11.01        | 11.55        | 10.77        | 11.13        | 16.66        |
| 1921-22.....                | 12.53        | 19.50        | 19.25        | 17.43        | 17.47        | 17.04        | 15.73        | 17.12        | 16.92        | 19.22        | 21.55        | 22.27        | 18.09        |
| 1922-23.....                | 21.53        | 20.72        | 22.11        | 25.20        | 25.40        | 27.39        | 28.62        | 30.21        | 28.28        | 26.47        | 28.20        | 25.87        | 25.83        |
| 1923-24.....                | 24.22        | 27.67        | 28.90        | 33.30        | 34.39        | 33.69        | 31.73        | 28.54        | 30.25        | 30.32        | 29.37        | 29.32        | 30.14        |
| 1924-25.....                | 27.16        | 22.74        | 23.29        | 23.63        | 23.40        | 23.52        | 23.51        | 25.51        | 25.05        | 25.62        | 24.19        | 24.55        | 24.22        |
| 1925-26.....                | 23.35        | 23.23        | 20.95        | 19.92        | 19.31        | 20.04        | 19.63        | 18.33        | 18.05        | 17.95        | 17.52        | 17.92        | 19.68        |
| 1926-27.....                | 17.65        | 15.96        | 12.40        | 12.17        | 11.81        | 12.72        | 13.45        | 13.74        | 14.08        | 15.38        | 16.10        | 17.34        | 14.40        |
| 1927-28.....                | 19.16        | 21.19        | 20.35        | 19.74        | 18.99        | 18.44        | 17.60        | 18.76        | 19.76        | 20.50        | 20.82        | 21.25        | 19.72        |
| 1928-29.....                | 18.72        | 17.72        | 18.46        | 18.70        | 19.07        | 18.88        | 18.69        | 19.73        | 18.95        | 18.23        | 18.36        | 18.29        | 18.67        |
| 1929-30.....                | 18.04        | 18.01        | 17.62        | 16.75        | 16.64        | 16.56        | 15.11        | 14.74        | 15.40        | 15.12        | 13.21        | 12.21        | 15.79        |
| 1930-31.....                | 11.14        | 10.15        | 9.82         | 10.09        | 9.16         | 9.37         | 10.12        | 10.15        | 9.50         | 8.70         | 8.42         | 8.66         | 9.61         |
| 1931-32.....                | 6.87         | 5.83         | 5.75         | 5.95         | 6.78         | 6.15         | 6.40         | 6.44         | 5.83         | 5.41         | 4.99         | 5.54         | 5.89         |
| 1932-33.....                | 7.08         | 7.40         | 6.37         | 6.03         | 5.72         | 6.01         | 5.85         | 6.19         | 6.84         | 8.49         | 9.28         | 10.52        | 7.15         |
| 1933-34.....                | 9.24         | 9.19         | 9.16         | 9.65         | 9.87         | 10.61        | 12.02        | 12.09        | 11.66        | 11.28        | 12.04        | 12.58        | 10.81        |
| 1934-35.....                | 13.12        | 12.85        | 12.40        | 12.46        | 12.60        | 12.55        | 12.47        | 11.57        |              |              |              |              |              |

Bureau of Agricultural Economics; compiled from daily reports to the Bureau from the cotton exchanges of the various markets. Data for earlier years appear in previous issues of the Yearbook.

TABLE 125.—*Cotton: Average discounts and premiums for staples shorter or longer than 7/8-inch Middling spot cotton, 1924-25 to 1933-34*

| Year beginning August— | Discount for 1 1/8 inch <sup>1</sup> | 7/8-inch, average price per pound <sup>2</sup> | Premiums for <sup>3</sup> — |                     |                     |                     |                     |                     |
|------------------------|--------------------------------------|--|-----------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                        |                                      |  | 1 1/8 inch                  | 1 inch              | 1 1/8 inches        | 1 1/8 inches        | 1 1/8 inches        | 1 1/8 inches        |
|                        | Points <sup>4</sup>                  | Cents  | Points <sup>4</sup>         | Points <sup>4</sup> | Points <sup>4</sup> | Points <sup>4</sup> | Points <sup>4</sup> | Points <sup>4</sup> |
| 1924-25.....           | 85                                   | 24.22  | 58                          | 82                  | 178                 | 396                 | 621                 | 898                 |
| 1925-26.....           | 125                                  | 19.68  | 76                          | 106                 | 202                 | 396                 | 635                 | 935                 |
| 1926-27.....           | 100                                  | 14.40  | 66                          | 106                 | 159                 | 266                 | 480                 | 860                 |
| 1927-28.....           | 94                                   | 19.72  | 37                          | 93                  | 166                 | 275                 | 409                 | 631                 |
| 1928-29.....           | 67                                   | 18.67  | 33                          | 96                  | 177                 | 237                 | 332                 | 587                 |
| 1929-30.....           | 108                                  | 15.79  | 45                          | 118                 | 182                 | 232                 | 347                 | 630                 |
| 1930-31.....           | 95                                   | 9.61   | 41                          | 91                  | 154                 | 192                 | 317                 | 670                 |
| 1931-32.....           | 36                                   | 5.89   | 21                          | 51                  | 93                  | 154                 | 244                 | <sup>5</sup> 425    |
| 1932-33.....           | 21                                   | 7.15   | 14                          | 39                  | 75                  | 106                 | <sup>5</sup> 201    | <sup>5</sup> 425    |
| 1933-34.....           | 23                                   | 10.81  | 19                          | 53                  | 110                 | 161                 | <sup>5</sup> 270    | <sup>5</sup> 453    |

<sup>1</sup> Average of New Orleans, Houston, and Galveston, calculated from actual sales and partly estimated.<sup>2</sup> Average for the 10 designated spot markets.<sup>3</sup> Average of New Orleans and Memphis for 1 1/8 inches and longer and for 1 1/8 inch and 1 inch from 1924-25 to 1926-27, inclusive. Average of the 6 designated markets (New Orleans, Memphis, Houston, Galveston, Dallas, and Little Rock) for 1 1/8 inch and 1 inch from 1927-28 to 1933-34, inclusive.<sup>4</sup> Hundredths of a cent a pound.<sup>5</sup> Memphis only.

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TABLE 126.—*Cotton: Average premiums and discounts for grades <sup>1</sup> above and below Middling for the 10 designated spot markets, 1924-25 to 1933-34*

| Year beginning August— | Premiums for—       |                       |                     |                     | Mid-dling, <sup>1</sup> average price per pound | Discounts for—       |                     |                                   |                            |
|------------------------|---------------------|-----------------------|---------------------|---------------------|---|----------------------|---------------------|-----------------------------------|----------------------------|
|                        | Mid-dling Fair      | Strict Good Mid-dling | Good Mid-dling      | Strict Mid-dling    |   | Strict Low Mid-dling | Low Mid-dling       | Strict Good Ordinary <sup>2</sup> | Good Ordinary <sup>2</sup> |
|                        | Points <sup>3</sup> | Points <sup>3</sup>   | Points <sup>3</sup> | Points <sup>3</sup> | Cents   | Points <sup>3</sup>  | Points <sup>3</sup> | Points <sup>3</sup>               | Points <sup>3</sup>        |
| 1924-25.....           | 108                 | 84                    | 60                  | 37                  | 24.22   | 74                   | 171                 | 289                               | 406                        |
| 1925-26.....           | 124                 | 98                    | 73                  | 50                  | 19.68   | 110                  | 268                 | 432                               | 563                        |
| 1926-27.....           | 129                 | 108                   | 82                  | 58                  | 14.40   | 104                  | 238                 | 381                               | 501                        |
| 1927-28.....           | 100                 | 76                    | 51                  | 33                  | 19.72   | 51                   | 114                 | 197                               | 284                        |
| 1928-29.....           | 81                  | 60                    | 42                  | 28                  | 18.67   | 73                   | 153                 | 236                               | 322                        |
| 1929-30.....           | 92                  | 76                    | 61                  | 41                  | 15.79   | 74                   | 170                 | 278                               | 376                        |
| 1930-31.....           | 88                  | 70                    | 52                  | 31                  | 9.61  | 59                   | 138                 | 226                               | 305                        |
| 1931-32.....           | 70                  | 56                    | 41                  | 24                  | 5.89  | 29                   | 64                  | 101                               | 138                        |
| 1932-33.....           | 62                  | 50                    | 39                  | 25                  | 7.15  | 27                   | 55                  | 89                                | 123                        |
| 1933-34.....           | 71                  | 56                    | 44                  | 30                  | 10.81   | 35                   | 75                  | 123                               | 165                        |

<sup>1</sup> White standards and 7/8-inch staple.<sup>2</sup> These grades untenderable according to sec. 5 of the United States Cotton Futures Act.<sup>3</sup> Hundredths of a cent a pound.

Bureau of Agricultural Economics. Data for earlier years in 1934 Yearbook, table 126.

TABLE 127.—Cotton: Average spot price per pound at Liverpool, by kind and by months, 1924-25 to 1934-35

| Description and year                            | Aug.         | Sept.        | Oct.         | Nov.         | Dec.         | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | July         | Average      |
|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| <b>American Middling:</b>                       | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> |
| 1924-25   | 31.63        | 26.49        | 26.14        | 26.08        | 25.73        | 26.08        | 27.14        | 28.04        | 26.85        | 25.83        | 27.34        | 27.76        | 27.09        |
| 1925-26   | 26.29        | 26.25        | 23.16        | 21.40        | 20.46        | 21.68        | 21.41        | 20.32        | 20.38        | 20.72        | 19.97        | 19.77        | 21.82        |
| 1926-27   | 19.69        | 19.34        | 14.52        | 14.07        | 13.46        | 14.56        | 15.55        | 15.65        | 16.14        | 17.90        | 18.49        | 19.43        | 16.57        |
| 1927-28   | 21.09        | 24.17        | 23.36        | 22.73        | 21.98        | 21.68        | 20.54        | 21.80        | 22.75        | 23.52        | 23.70        | 24.43        | 22.65        |
| 1928-29   | 21.39        | 20.87        | 21.86        | 21.62        | 21.57        | 21.89        | 21.09        | 22.32        | 21.57        | 20.62        | 20.89        | 21.09        | 21.36        |
| 1929-30   | 21.01        | 20.93        | 20.52        | 19.61        | 19.22        | 19.00        | 17.36        | 16.83        | 17.72        | 17.46        | 16.16        | 15.47        | 18.44        |
| 1930-31   | 14.09        | 12.63        | 11.88        | 12.13        | 10.99        | 11.19        | 12.06        | 12.09        | 11.42        | 10.56        | 10.00        | 10.26        | 11.61        |
| 1931-32   | 7.91         | 7.70         | 7.65         | 7.70         | 7.38         | 7.78         | 8.25         | 8.31         | 7.59         | 6.92         | 6.43         | 6.92         | 7.54         |
| 1932-33   | 8.11         | 8.87         | 7.91         | 7.52         | 7.09         | 7.37         | 7.10         | 7.29         | 8.01         | 9.88         | 10.77        | 12.32        | 8.52         |
| 1933-34   | 10.96        | 10.67        | 10.66        | 11.24        | 11.19        | 12.43        | 13.83        | 13.86        | 13.31        | 13.04        | 13.86        | 14.60        | 12.47        |
| 1934-35   | 15.13        | 14.69        | 14.27        | 14.28        | 14.65        | 14.60        | 14.36        |              |              |              |              |              |              |
| <b>Indian Omra, No. 1, Fine:</b>                |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1924-25   | 24.43        | 21.78        | 23.44        | 24.76        | 24.46        | 23.73        | 24.16        | 24.76        | 23.18        | 21.99        | 22.38        | 22.60        | 23.49        |
| 1925-26   | 22.26        | 22.80        | 20.70        | 18.90        | 17.57        | 18.17        | 17.56        | 16.20        | 15.96        | 16.38        | 15.59        | 15.76        | 18.15        |
| 1926-27   | 16.06        | 15.98        | 13.08        | 12.69        | 12.17        | 12.98        | 13.79        | 13.87        | 14.32        | 15.92        | 16.65        | 17.46        | 14.58        |
| 1927-28   | 18.29        | 20.70        | 19.79        | 18.70        | 18.13        | 17.88        | 16.99        | 17.97        | 18.37        | 18.88        | 19.08        | 19.14        | 18.66        |
| 1928-29   | 16.57        | 15.65        | 16.26        | 16.53        | 16.99        | 16.75        | 16.42        | 17.50        | 16.14        | 15.33        | 15.69        | 15.73        | 16.30        |
| 1929-30   | 15.73        | 15.71        | 15.37        | 14.50        | 14.32        | 13.87        | 12.09        | 11.36        | 11.66        | 11.36        | 10.18        | 9.21         | 12.95        |
| 1930-31   | 8.23         | 8.15         | 8.17         | 8.68         | 7.73         | 7.91         | 8.84         | 8.84         | 8.33         | 7.73         | 7.62         | 8.05         | 8.19         |
| 1931-32   | 6.45         | 6.19         | 6.50         | 6.91         | 6.75         | 7.55         | 7.81         | 7.61         | 6.92         | 6.28         | 5.77         | 6.32         | 6.76         |
| 1932-33   | 7.27         | 7.87         | 6.95         | 6.73         | 6.32         | 6.61         | 6.33         | 6.32         | 6.44         | 7.96         | 8.70         | 9.98         | 7.29         |
| 1933-34   | 8.78         | 8.55         | 8.44         | 8.75         | 8.53         | 9.38         | 10.09        | 9.87         | 9.38         | 9.49         | 10.37        | 10.61        | 9.35         |
| 1934-35   | 10.81        | 10.34        | 9.74         | 9.98         | 10.59        | 11.07        | 11.17        |              |              |              |              |              |              |
| <b>Egyptian Sakellari-dis, Fully Good Fair:</b> |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1924-25   | 48.28        | 46.30        | 47.23        | 49.63        | 55.60        | 60.71        | 69.40        | 73.39        | 63.32        | 62.00        | 64.36        | 65.04        | 68.77        |
| 1925-26   | 61.13        | 56.96        | 50.91        | 41.51        | 35.76        | 37.19        | 36.62        | 32.32        | 32.38        | 34.07        | 33.94        | 32.85        | 40.47        |
| 1926-27   | 32.04        | 36.32        | 31.21        | 30.23        | 27.82        | 27.96        | 27.82        | 27.46        | 28.06        | 33.15        | 34.41        | 37.92        | 31.20        |
| 1927-28   | 39.13        | 40.57        | 38.51        | 37.80        | 35.48        | 35.61        | 35.38        | 39.90        | 42.97        | 43.49        | 43.03        | 40.64        | 39.38        |
| 1928-29   | 37.61        | 36.54        | 36.74        | 37.35        | 39.11        | 38.83        | 36.52        | 38.69        | 37.55        | 35.79        | 33.44        | 33.78        | 36.83        |
| 1929-30   | 34.07        | 34.90        | 32.16        | 30.27        | 28.87        | 29.26        | 27.62        | 28.02        | 28.79        | 28.37        | 25.79        | 25.10        | 29.44        |
| 1930-31   | 23.22        | 20.89        | 19.61        | 19.51        | 18.22        | 17.01        | 19.47        | 19.59        | 17.74        | 16.59        | 15.63        | 15.57        | 18.42        |
| 1931-32   | 12.15        | 11.82        | 11.60        | 11.50        | 10.05        | 10.38        | 10.93        | 11.25        | 10.30        | 9.33         | 8.93         | 10.04        | 10.69        |
| 1932-33   | 11.47        | 12.60        | 11.31        | 10.58        | 9.64         | 10.36        | 10.15        | 10.18        | 11.04        | 13.24        | 14.35        | 16.31        | 11.77        |
| 1933-34   | 14.75        | 14.29        | 13.85        | 15.19        | 15.54        | 17.74        | 19.19        | 18.81        | 18.04        | 17.85        | 17.69        | 17.79        | 16.73        |
| 1934-35   | 18.44        | 17.54        | 16.82        | 18.25        | 18.57        | 18.39        | 17.95        |              |              |              |              |              |              |
| <b>Egyptian Uppers, Fully Good Fair:</b>        |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1924-25   | 44.38        | 36.63        | 33.35        | 34.28        | 36.31        | 39.11        | 39.35        | 41.87        | 40.44        | 38.39        | 37.43        | 38.07        | 38.30        |
| 1925-26   | 37.01        | 36.11        | 34.36        | 31.68        | 29.44        | 28.92        | 27.46        | 25.18        | 24.88        | 25.24        | 25.18        | 24.25        | 29.14        |
| 1926-27   | 24.78        | 27.09        | 22.55        | 21.25        | 19.06        | 20.76        | 21.41        | 21.82        | 22.10        | 25.63        | 27.19        | 28.98        | 23.55        |
| 1927-28   | 30.52        | 31.90        | 30.60        | 30.09        | 28.45        | 28.06        | 28.44        | 28.77        | 30.98        | 31.33        | 30.15        | 29.20        | 29.71        |
| 1928-29   | 25.91        | 24.11        | 25.18        | 24.84        | 24.84        | 24.94        | 24.43        | 26.12        | 25.08        | 23.38        | 22.97        | 23.03        | 24.57        |
| 1929-30   | 22.89        | 23.54        | 22.45        | 21.60        | 21.23        | 21.29        | 20.66        | 20.52        | 21.13        | 20.80        | 19.45        | 19.21        | 21.25        |
| 1930-31   | 17.92        | 17.09        | 14.28        | 13.71        | 12.49        | 12.98        | 14.46        | 14.42        | 13.38        | 12.55        | 11.92        | 12.25        | 13.95        |
| 1931-32   | 9.51         | 9.55         | 8.93         | 8.97         | 8.20         | 8.81         | 9.53         | 9.83         | 9.00         | 8.21         | 7.90         | 8.74         | 8.93         |
| 1932-33   | 10.08        | 10.95        | 10.05        | 9.76         | 8.18         | 9.57         | 9.30         | 9.18         | 9.81         | 11.96        | 12.73        | 14.71        | 10.61        |
| 1933-34   | 13.32        | 12.61        | 12.10        | 12.55        | 12.60        | 13.91        | 15.06        | 15.05        | 14.22        | 14.08        | 14.53        | 15.16        | 13.77        |
| 1934-35   | 15.79        | 15.15        | 14.72        | 15.36        | 16.01        | 16.29        | 15.60        |              |              |              |              |              |              |

Bureau of Agricultural Economics. Compiled from market reports of the Liverpool Cotton Association. Average of Friday's prices, except when Friday was a holiday, the prices on the preceding business day were used. Converted from pence to cents at the current rate of exchange. Prices in this table are revised and do not always agree with those published in Yearbooks prior to the 1933 issue.



TABLE 128.—Cotton: *International trade, average 1925-26 to 1929-30, annual 1930-31 to 1933-34*

| Country                            | Year beginning July        |                |                |                |                |                |                  |                    |                      |                  |
|------------------------------------|----------------------------|----------------|----------------|----------------|----------------|----------------|------------------|--------------------|----------------------|------------------|
|                                    | Average 1925-26 to 1929-30 |                | 1930-31        |                | 1931-32        |                | 1932-33          |                    | 1933-34 <sup>1</sup> |                  |
|                                    | Exports                    | Imports        | Exports        | Imports        | Exports        | Imports        | Exports          | Imports            | Exports              | Imports          |
| PRINCIPAL EXPORT-<br>ING COUNTRIES | 1,000<br>bales             | 1,000<br>bales | 1,000<br>bales | 1,000<br>bales | 1,000<br>bales | 1,000<br>bales | 1,000<br>bales   | 1,000<br>bales     | 1,000<br>bales       | 1,000<br>bales   |
| United States.....                 | 8,579                      | 399            | 7,048          | 107            | 8,989          | 139            | 8,647            | 133                | 8,366                | <sup>2</sup> 157 |
| British India.....                 | 2,938                      | 176            | 3,152          | 388            | 1,565          | 476            | 2,126            | 193                | 2,585                | 202              |
| Egypt.....                         | 1,484                      | 0              | 1,284          | 0              | 1,652          | 0              | 1,274            | 0                  | 1,875                | 0                |
| Brazil.....                        | 119                        | 0              | 109            | 0              | 40             | 0              | 5                | 0                  | 236                  | 0                |
| Argentina.....                     | 88                         | <sup>3</sup> 1 | 107            | 1              | 123            | 0              | 122              | 0                  | 92                   | 0                |
| Total.....                         | 13,208                     | 576            | 11,700         | 496            | 12,369         | 615            | 12,174           | 326                | 13,154               | 359              |
| PRINCIPAL IMPORT-<br>ING COUNTRIES |                            |                |                |                |                |                |                  |                    |                      |                  |
| United Kingdom.....                | 0                          | 3,070          | 0              | 2,172          | 0              | 2,475          | 0                | 2,460              | 0                    | 2,950            |
| Japan.....                         | 0                          | 3,061          | 0              | 2,777          | 0              | 3,628          | 0                | 3,089              | 0                    | 3,563            |
| Germany.....                       | 325                        | 1,900          | 358            | 1,645          | 350            | 1,660          | 270              | 1,771              | 253                  | 1,923            |
| France.....                        | 100                        | 1,640          | 43             | 1,664          | 47             | 787            | 24               | 1,402              | 12                   | 1,473            |
| Italy.....                         | 1                          | 1,053          | 1              | 791            | 0              | 856            | 0                | 898                | 2                    | 1,009            |
| China <sup>4</sup> .....           | 289                        | 636            | 230            | 984            | 220            | 1,298          | <sup>5</sup> 185 | <sup>5</sup> 1,036 | 202                  | 556              |
| Czechoslovakia.....                | 4                          | 567            | 1              | 450            | 1              | 395            | 0                | 340                | 1                    | 349              |
| Belgium.....                       | 14                         | 400            | 38             | 357            | 73             | 300            | 61               | 368                | 114                  | 388              |
| Poland.....                        | 0                          | 283            | 0              | 282            | 0              | 218            | 0                | 241                | 0                    | 314              |
| Canada.....                        | 0                          | 271            | 0              | 209            | 0              | 202            | 0                | 191                | 0                    | 317              |
| Netherlands.....                   | 2                          | 192            | 1              | 215            | 2              | 189            | 1                | 152                | 2                    | 207              |
| Austria.....                       | 1                          | 149            | 0              | 99             | 0              | 115            | 0                | 88                 | 1                    | 138              |
| Switzerland.....                   | 0                          | 141            | 0              | 123            | 2              | 109            | 0                | 117                | 0                    | 123              |
| Sweden.....                        | 0                          | 106            | 0              | 96             | 0              | 121            | 0                | 109                | 0                    | 137              |
| Total.....                         | 736                        | 13,469         | 672            | 11,844         | 695            | 12,359         | 541              | 12,262             | 587                  | 13,447           |

<sup>1</sup> Preliminary.<sup>2</sup> Imports for consumption.<sup>3</sup> 3-year average.<sup>4</sup> Calendar year.<sup>5</sup> Beginning July 1, 1932, figures do not include Manchuria.

Bureau of Agricultural Economics; official sources except where otherwise noted.

Bales of 500 pounds gross weight or 478 pounds net. The figures for cotton refer to ginned and unginned cotton, but do not include linters, mill waste, cotton batting, scarto (Egyptian and Sudan), when separately stated. Wherever unginned cotton has been separately stated in the original reports it has been reduced to ginned cotton in this statement at the ratio of 3 pounds unginned to 1 pound ginned.

TABLE 129.—Cottonseed and cottonseed products: *Cottonseed production, weighted average price per ton received by producers, farm value, quantity crushed, and products, 1919-20 to 1934-35*

| Year beginning<br>August | Cottonseed              |                  |                  |                                  | Cottonseed products <sup>1</sup> |                     |                          |                     |
|--------------------------|-------------------------|------------------|------------------|----------------------------------|----------------------------------|---------------------|--------------------------|---------------------|
|                          | Production <sup>2</sup> | Price,<br>Dec. 1 | Farm<br>value    | Quantity<br>crushed <sup>1</sup> | Crude<br>oil                     | Cake and<br>meal    | Linters                  | Hulls               |
|                          | 1,000 short<br>tons     | Dollars          | 1,000<br>dollars | 1,000 short<br>tons              | 1,000 short<br>tons              | 1,000 short<br>tons | 1,000 run-<br>ning bales | 1,000 short<br>tons |
| 1919-20                  | 5,074                   |                  |                  | 4,013                            | 606                              | 1,817               | 505                      | 1,143               |
| 1920-21                  | 5,971                   |                  |                  | 4,069                            | 655                              | 1,786               | 429                      | 1,256               |
| 1921-22                  | 3,531                   | 28.79            | 101,577          | 3,008                            | 465                              | 1,355               | 382                      | 937                 |
| 1922-23                  | 4,336                   | 35.67            | 154,433          | 3,242                            | 501                              | 1,487               | 501                      | 944                 |
| 1923-24                  | 4,502                   | 42.99            | 193,576          | 3,308                            | 490                              | 1,518               | 640                      | 941                 |
| 1924-25                  | 6,051                   | 32.39            | 195,944          | 4,605                            | 702                              | 2,126               | 858                      | 1,331               |
| 1925-26                  | 7,150                   | 27.28            | 195,042          | 5,558                            | 809                              | 2,597               | 1,044                    | 1,547               |
| 1926-27                  | 7,982                   | 18.68            | 149,233          | 6,306                            | 944                              | 2,840               | 1,042                    | 1,854               |
| 1927-28                  | 5,759                   | 30.80            | 211,897          | 4,654                            | 738                              | 2,093               | 875                      | 1,320               |
| 1928-29                  | 6,435                   | 36.28            | 233,415          | 5,061                            | 802                              | 2,282               | 1,086                    | 1,368               |
| 1929-30                  | 6,590                   | 30.33            | 199,885          | 5,016                            | 786                              | 2,232               | 1,088                    | 1,384               |
| 1930-31                  | 6,190                   | 21.61            | 133,785          | 4,715                            | 721                              | 2,165               | 824                      | 1,804               |
| 1931-32                  | 7,002                   | 10.44            | 79,340           | 5,328                            | 847                              | 2,402               | 876                      | 1,511               |
| 1932-33                  | 5,783                   | 9.27             | 53,635           | 4,621                            | 723                              | 2,093               | 741                      | 1,312               |
| 1933-34                  | 5,804                   | 13.57            | 78,783           | 4,157                            | 652                              | 1,889               | 801                      | 1,103               |
| 1934-35 <sup>3</sup>     | 4,324                   | 35.64            | 154,106          |                                  |                                  |                     |                          |                     |

<sup>1</sup> Crushings and products are not limited to the crop specified.<sup>2</sup> Estimated from the production of lint cotton, assuming 65 pounds of seed for each 35 pounds of lint. Refers to the cotton crop of the year stated.<sup>3</sup> Preliminary.

Bureau of Agricultural Economics. Production, farm price and value, are estimates of the Crop Reporting Board; quantity crushed and products from annual reports of the Bureau of the Census, Cotton Production and Distribution.

TABLE 130.—*Cottonseed: Production and weighted average price per ton received by producers, by States, average 1928-32, and annual 1933 and 1934*

| State               | Production <sup>1</sup> from crop of— |                     |                     | Price for crop of— |                   |
|---------------------|---------------------------------------|---------------------|---------------------|--------------------|-------------------|
|                     | Average,<br>1928-32                   | 1933                | 1934 <sup>2</sup>   | 1933               | 1934 <sup>2</sup> |
|                     | 1,000 short<br>tons                   | 1,000 short<br>tons | 1,000 short<br>tons | Dollars            | Dollars           |
| Missouri.....       | 102                                   | 112                 | 109                 | 11.58              | 32.00             |
| Virginia.....       | 20                                    | 17                  | 17                  | 15.95              | 37.60             |
| North Carolina..... | 333                                   | 304                 | 288                 | 16.25              | 35.90             |
| South Carolina..... | 330                                   | 326                 | 308                 | 17.58              | 35.80             |
| Georgia.....        | 551                                   | 490                 | 443                 | 17.49              | 35.20             |
| Florida.....        | 16                                    | 12                  | 12                  | 14.40              | 29.20             |
| Tennessee.....      | 213                                   | 197                 | 183                 | 14.05              | 36.50             |
| Alabama.....        | 553                                   | 431                 | 429                 | 16.01              | 34.20             |
| Mississippi.....    | 693                                   | 515                 | 509                 | 15.92              | 37.20             |
| Arkansas.....       | 600                                   | 463                 | 389                 | 13.70              | 35.70             |
| Louisiana.....      | 331                                   | 212                 | 217                 | 13.18              | 34.10             |
| Oklahoma.....       | 493                                   | 563                 | 144                 | 11.34              | 36.20             |
| Texas.....          | 2,041                                 | 1,973               | 1,066               | 13.66              | 37.30             |
| New Mexico.....     | 40                                    | 42                  | 41                  | 11.34              | 38.60             |
| Arizona.....        | 57                                    | 43                  | 49                  | 12.38              | 30.90             |
| California.....     | 89                                    | 97                  | 113                 | 12.60              | 32.20             |
| All other.....      | 5                                     | 7                   | 8                   | 12.99              | 35.60             |
| United States.....  | 6,520                                 | 5,804               | 4,324               | 14.43              | 35.84             |

<sup>1</sup> Computed from lint production, assuming 65 pounds of cottonseed for each 35 net pounds of lint.<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 131.—*Cottonseed: Average price per ton received by producers, United States, 1925-26 to 1934-35*

| Year         | Aug.<br>15 | Sept.<br>15 | Oct.<br>15 | Nov.<br>15 | Dec.<br>15 | Jan.<br>15 | Feb.<br>15 | Mar.<br>15 | Apr.<br>15 | May<br>15 | June<br>15 | July<br>15 | Weighted<br>average |
|--------------|------------|-------------|------------|------------|------------|------------|------------|------------|------------|-----------|------------|------------|---------------------|
|              | Dol.       | Dol.        | Dol.       | Dol.       | Dol.       | Dol.       | Dol.       | Dol.       | Dol.       | Dol.      | Dol.       | Dol.       | Dol.                |
| 1925-26..... | 36.52      | 33.48       | 32.82      | 27.64      | 27.87      | 28.40      | 29.06      | 29.47      | 31.61      | 30.84     | 31.89      | 31.31      | 30.82               |
| 1926-27..... | 29.73      | 27.38       | 20.06      | 18.66      | 18.05      | 18.55      | 22.39      | 25.43      | 25.80      | 26.05     | 26.27      | 26.59      | 21.55               |
| 1927-28..... | 25.95      | 34.41       | 36.60      | 37.51      | 37.14      | 37.40      | 37.44      | 37.77      | 39.40      | 43.00     | 41.25      | 39.27      | 35.94               |
| 1928-29..... | 36.87      | 31.02       | 34.08      | 37.17      | 37.74      | 38.05      | 38.73      | 39.36      | 38.94      | 37.78     | 35.83      | 34.84      | 35.26               |
| 1929-30..... | 32.69      | 31.03       | 31.40      | 30.75      | 30.81      | 28.95      | 28.89      | 28.63      | 29.74      | 30.61     | 29.66      | 27.35      | 30.43               |
| 1930-31..... | 23.99      | 23.89       | 20.73      | 21.26      | 21.28      | 21.25      | 21.87      | 22.43      | 22.85      | 22.32     | 20.32      | 19.52      | 21.93               |
| 1931-32..... | 14.71      | 8.93        | 7.66       | 11.61      | 11.01      | 10.38      | 10.12      | 10.17      | 9.78       | 9.66      | 8.85       | 8.61       | 9.52                |
| 1932-33..... | 9.13       | 11.28       | 10.45      | 9.54       | 8.87       | 8.81       | 8.91       | 9.22       | 10.03      | 12.00     | 12.96      | 16.59      | 10.35               |
| 1933-34..... | 15.60      | 12.11       | 12.58      | 13.67      | 15.35      | 16.18      | 18.90      | 20.84      | 21.88      | 22.23     | 21.59      | 22.18      | 14.43               |
| 1934-35..... | 25.46      | 31.54       | 35.62      | 37.08      | 39.60      | -----      | -----      | -----      | -----      | -----     | -----      | -----      | 35.84               |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighing State price averages for the crop-marketing season. Data for earlier years in 1923 Yearbook, table 272.

TABLE 132.—*Cottonseed oil, crude: Average price per pound in tanks, f. o. b. south-eastern mills, 1925-26 to 1934-35*

| Year         | Aug.  | Sept. | Oct.  | Nov.  | Dec.  | Jan.  | Feb.  | Mar.  | Apr.  | May   | June  | July  | Average <sup>1</sup> |
|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------------|
|              | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents                |
| 1925-26..... | 9.14  | 8.55  | 8.90  | 8.98  | 9.75  | 10.71 | 11.00 | 11.22 | 12.17 | ----- | ----- | ----- | 10.05                |
| 1926-27..... | 10.88 | 8.19  | 7.44  | 6.64  | 6.36  | 6.94  | 8.20  | 7.73  | 7.35  | 7.74  | 8.04  | ----- | 7.77                 |
| 1927-28..... | 8.70  | 9.25  | 9.45  | 9.05  | 8.72  | 8.48  | 7.75  | 8.44  | 8.75  | 8.88  | ----- | ----- | 8.75                 |
| 1928-29..... | 8.16  | 8.14  | 8.24  | 8.38  | 8.63  | 9.12  | 9.00  | 8.37  | 7.94  | ----- | ----- | ----- | 8.44                 |
| 1929-30..... | 7.66  | 7.33  | 7.38  | 7.26  | 7.24  | 7.40  | 7.13  | 7.48  | 7.32  | 6.95  | 7.00  | ----- | 7.29                 |
| 1930-31..... | 6.76  | 6.48  | 6.14  | 6.35  | 6.12  | 6.18  | 6.37  | 6.75  | 6.72  | 6.38  | 6.27  | ----- | 6.41                 |
| 1931-32..... | ----- | 3.60  | 3.64  | 3.80  | 3.33  | 3.24  | 3.22  | 3.12  | 2.61  | 2.56  | 2.96  | 3.24  | 3.19                 |
| 1932-33..... | 3.71  | 3.71  | 3.25  | 3.00  | 2.72  | 2.80  | 2.74  | 2.88  | 3.18  | 4.16  | 4.38  | 5.45  | 3.51                 |
| 1933-34..... | 4.48  | 4.37  | 3.23  | 3.58  | 3.43  | 3.56  | 4.18  | 4.44  | 4.40  | 4.26  | 4.68  | 5.10  | 4.69                 |
| 1934-35..... | 6.65  | 6.55  | 7.20  | 7.91  | 8.94  | ----- | ----- | ----- | ----- | ----- | ----- | ----- | -----                |

<sup>1</sup> Where quotations are missing, average is for months shown.<sup>2</sup> January 1929-July 1930 quoted in barrels.<sup>3</sup> Less than 10 quotations during the month. Other quotations were bids.

Bureau of Agricultural Economics; compiled from the Oil, Paint, and Drug Reporter; prices, 1925-26 to 1927-28 are averages of weekly quotations; beginning 1928-29, averages of daily quotations; October 1932-June 1933, from New York Journal of Commerce, average of Saturday quotations during the month. Data for 1909-10 to 1924-25 are available in the 1930 Yearbook, table 149.

TABLE 133.—*Cottonseed oil, prime summer yellow: Average spot price per pound, New York, 1925-26 to 1934-35*<sup>1</sup>

| Year    | Aug.         | Sept.        | Oct.         | Nov.         | Dec.         | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | July         | Average      |
|---------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|         | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> |
| 1925-26 | 11.09        | 10.81        | 9.86         | 10.32        | 10.47        | 11.33        | 11.28        | 12.24        | 12.38        | 14.48        | 15.38        | 14.99        | 12.05        |
| 1926-27 | 12.99        | 11.42        | 8.82         | 8.20         | 8.22         | 8.50         | 9.31         | 9.39         | 8.78         | 9.09         | 9.19         | 9.57         | 9.46         |
| 1927-28 | 9.89         | 10.74        | 10.83        | 10.55        | 10.06        | 10.02        | 9.27         | 9.64         | 10.04        | 10.52        | 10.22        | 10.03        | 10.15        |
| 1928-29 | 9.44         | 10.03        | 9.84         | 9.69         | 10.21        | 20.33        | 10.88        | 10.74        | 10.11        | 9.75         | 9.64         | 9.62         | 10.02        |
| 1929-30 | 9.27         | 9.19         | 9.23         | 9.01         | 8.77         | 8.46         | 8.46         | 8.41         | 8.80         | 8.76         | 8.23         | 7.99         | 8.72         |
| 1930-31 | 8.34         | 8.20         | 7.60         | 7.57         | 7.28         | 7.20         | 7.29         | 7.58         | 7.55         | 6.99         | 6.76         | 7.00         | 7.45         |
| 1931-32 | 5.77         | 4.39         | 4.48         | 4.55         | 4.09         | 4.08         | 3.95         | 3.96         | 3.46         | 3.18         | 3.34         | 3.83         | 4.09         |
| 1932-33 | 4.51         | 4.48         | 3.97         | 3.75         | 3.48         | 3.62         | 3.53         | 3.77         | 4.08         | 4.99         | 5.48         | 6.17         | 4.32         |
| 1933-34 | 5.16         | 4.61         | 4.19         | 4.50         | 4.30         | 4.70         | 5.10         | 5.10         | 5.20         | 5.00         | 5.30         | 5.90         | 4.92         |
| 1934-35 | 6.80         | 7.50         | 8.10         | 9.20         | 10.10        | -----        | -----        | -----        | -----        | -----        | -----        | -----        | -----        |

<sup>1</sup> Prices through July 1930 quoted in barrels; beginning August 1930, quoted in tanks.<sup>2</sup> From November 1933 prices from Bureau of Labor Statistics.

Bureau of Agricultural Economics, compiled from Oil, Paint, and Drug Reporter, average of daily ranges.

Data for 1890-91 to 1924-25 are available in 1924 Yearbook, table 323; and 1934 Yearbook, table 132.

TABLE 134.—*Cottonseed oil: International trade, average 1925-29, annual 1930-33*

| Country                              | Calendar year       |                     |                     |                     |                     |                     |                     |                     |                     |                     |
|--------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                                      | Average, 1925-29    |                     | 1930                |                     | 1931                |                     | 1932                |                     | 1933 <sup>1</sup>   |                     |
|                                      | Ex-ports            | Im-ports            | Ex-ports            | Im-ports            | Ex-ports            | Im-ports            | Ex-ports            | Im-ports            | Ex-ports            | Im-ports            |
| <b>PRINCIPAL EXPORTING COUNTRIES</b> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> |
| United States                        | 49,815              | 0                   | 23,297              | 0                   | 22,578              | 0                   | 55,767              | 0                   | 35,435              | 0                   |
| United Kingdom                       | 46,146              | 18,657              | 38,835              | 35,534              | 33,378              | 13,803              | 38,078              | 13,581              | 21,007              | 16,968              |
| Egypt                                | 22,724              | 80                  | 24,717              | 0                   | 17,637              | 1                   | 18,885              | 0                   | 4,414               | 38                  |
| Peru                                 | 9,526               | 0                   | 6,947               | 0                   | 1,923               | 0                   | 911                 | 0                   | 876                 | 0                   |
| Brazil                               | 352                 | 23                  | 2,314               | 2                   | 0                   | 2                   | 10                  | 7                   | -----               | -----               |
| Algeria                              | 38                  | 29                  | 43                  | 48                  | 8                   | 2                   | 14                  | -----               | -----               | -----               |
| Total                                | 123,601             | 18,789              | 101,153             | 35,614              | 75,524              | 13,808              | 113,665             | 13,588              | 61,732              | 17,006              |
| <b>PRINCIPAL IMPORTING COUNTRIES</b> |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| Canada                               | 0                   | 39,439              | 0                   | 26,071              | 0                   | 17,205              | 0                   | 54,834              | 0                   | 30,358              |
| Germany                              | 283                 | 19,296              | 1,472               | 12,293              | 277                 | 9,216               | 75                  | 10,040              | 79                  | 6,942               |
| Netherlands                          | 6,481               | 16,831              | 119                 | 810                 | 51                  | 4,323               | 45                  | 1,810               | 271                 | 5,144               |
| France                               | 34                  | 7,792               | 57                  | 8,103               | 7                   | 6,789               | 1                   | 5,223               | 27                  | 4,255               |
| Denmark                              | 809                 | 6,624               | 786                 | 4,656               | 434                 | 5,919               | 517                 | 3,104               | 618                 | 1,150               |
| Norway                               | 0                   | 4,474               | 0                   | 1,353               | 0                   | 582                 | 0                   | 1,655               | 0                   | 592                 |
| Cuba                                 | 0                   | 4,090               | 0                   | 1,824               | 0                   | 1,565               | 0                   | 4,235               | 0                   | -----               |
| Malta <sup>2</sup>                   | 1                   | 3,034               | 0                   | 3,125               | 0                   | 3,559               | 0                   | 3,751               | -----               | -----               |
| Sweden                               | 447                 | 2,824               | 0                   | 3,082               | 0                   | 2,370               | 0                   | 5,428               | 0                   | 2,673               |
| Irish Free State                     | 0                   | 2,356               | 0                   | 4,170               | 0                   | 2,982               | 0                   | 4,126               | 0                   | -----               |
| Belgium                              | 15                  | 2,347               | 102                 | 660                 | 2                   | 544                 | 0                   | 517                 | 0                   | 557                 |
| Australia <sup>2</sup>               | 1                   | 1,914               | 103                 | 1,465               | 0                   | 1,313               | 90                  | 1,196               | -----               | -----               |
| Greece                               | 0                   | 1,478               | 0                   | 36                  | 0                   | 1                   | 0                   | 0                   | 0                   | 0                   |
| Argentina                            | 53                  | 1,470               | 6                   | 147                 | 4                   | 50                  | 0                   | 12                  | 2                   | 0                   |
| Syria and Lebanon <sup>2</sup>       | 0                   | 1,325               | 0                   | 209                 | 0                   | 114                 | 0                   | 914                 | 0                   | -----               |
| Japan                                | 600                 | 3,831               | 2,013               | 1,148               | 10                  | 1,154               | 12                  | 1,751               | 13                  | 3,684               |
| Gambia <sup>2</sup>                  | 9                   | 622                 | 0                   | 715                 | 0                   | 385                 | 0                   | 397                 | 0                   | -----               |
| Poland                               | 0                   | 585                 | 0                   | 882                 | 0                   | 398                 | 0                   | 416                 | 0                   | 30                  |
| Yugoslavia                           | 0                   | 498                 | 0                   | 47                  | 0                   | 69                  | 0                   | 7                   | 0                   | 1                   |
| Union of South Africa                | 0                   | 425                 | 0                   | 629                 | 0                   | 235                 | 0                   | 348                 | 0                   | 141                 |
| Uruguay                              | 0                   | 298                 | 0                   | 15                  | 0                   | 16                  | 0                   | 2                   | 0                   | -----               |
| Czechoslovakia                       | 0                   | 267                 | 0                   | 217                 | 47                  | 439                 | 0                   | 718                 | 0                   | 655                 |
| Italy                                | 2                   | 216                 | 1                   | 290                 | 0                   | 287                 | 0                   | 98                  | 0                   | 166                 |
| Total                                | 8,676               | 119,045             | 4,659               | 71,997              | 882                 | 59,515              | 740                 | 100,286             | 1,010               | 56,348              |

<sup>1</sup> Preliminary.<sup>2</sup> International Yearbook of Agricultural Statistics.<sup>3</sup> 4-year average.

Bureau of Agricultural Economics; official sources except where otherwise noted.

Crude and refined cottonseed oil (when separately shown) have been added without converting, as in many countries information is not available as to which it is.

TABLE 135.—*Cottonseed meal, 41-percent protein: Average price per ton, Memphis, 1925-26 to 1934-35*

| Year    | Aug.        | Sept.       | Oct.        | Nov.        | Dec.        | Jan.        | Feb.        | Mar.        | Apr.        | May         | June        | July        | Average     |
|---------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|         | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> |
| 1925-26 | 44.10       | 38.90       | 34.40       | 34.10       | 34.00       | 32.60       | 31.10       | 31.00       | 31.90       | 30.70       | 31.00       | 31.10       | 33.60       |
| 1926-27 | 32.10       | 28.90       | 23.90       | 23.70       | 24.50       | 30.10       | 33.50       | 32.40       | 32.50       | 34.00       | 37.40       | 36.00       | 30.75       |
| 1927-28 | (1)         | 37.40       | 37.70       | 39.60       | 41.40       | 40.40       | 45.10       | 49.30       | 55.50       | 61.50       | (1)         | 41.50       | -----       |
| 1928-29 | (1)         | 38.40       | 43.90       | 44.20       | 45.60       | 44.90       | 44.40       | 42.70       | 38.75       | 35.50       | 34.25       | 38.75       | -----       |
| 1929-30 | (1)         | 41.00       | 39.30       | 37.80       | 37.00       | 35.40       | 33.50       | 33.60       | 36.75       | 38.00       | 35.50       | 33.60       | -----       |
| 1930-31 | 36.25       | 30.90       | 27.50       | 27.50       | 25.60       | 25.75       | 24.90       | 26.40       | 26.25       | 24.60       | 22.40       | 21.20       | 26.60       |
| 1931-32 | 17.30       | 13.80       | 13.20       | 16.60       | 14.45       | 13.80       | 12.78       | 12.44       | 12.85       | 12.65       | 11.50       | 13.15       | 13.71       |
| 1932-33 | 17.35       | 16.75       | 14.40       | 13.35       | 11.80       | 11.85       | 12.00       | 13.10       | 15.20       | 17.50       | 18.60       | 27.65       | 15.80       |
| 1933-34 | 22.90       | 18.40       | 16.70       | 19.25       | 19.25       | 22.50       | 24.00       | 24.00       | 22.00       | 21.25       | 23.25       | 27.05       | 21.71       |
| 1934-35 | 34.80       | 33.90       | 33.90       | 37.00       | 37.75       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |

<sup>1</sup> Not reported.

Bureau of Agricultural Economics; compiled from reports made to the Bureau by its representative in the market.

TABLE 136.—*Cottonseed meal, 41-percent protein: Average price per ton, bagged, at 9 markets, 1934*

| Market          | Jan.        | Feb.        | Mar.        | Apr.        | May         | June        | July        | Aug.        | Sept.       | Oct.        | Nov.        | Dec.        | Average     |
|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                 | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> |
| Boston          | 31.65       | 33.65       | 33.65       | 32.15       | 30.90       | 32.70       | 34.70       | 39.95       | 41.15       | 42.15       | 43.45       | 44.30       | 36.70       |
| Philadelphia    | 29.20       | 30.00       | 30.00       | 27.75       | 27.20       | 28.65       | 30.85       | 36.65       | 37.90       | 38.60       | 40.55       | 41.15       | 33.21       |
| Buffalo         | 28.60       | 30.25       | 30.15       | 28.30       | 27.70       | 29.30       | 32.60       | 39.90       | 39.65       | 40.00       | 42.50       | 42.80       | 34.31       |
| Cincinnati      | 26.80       | 29.00       | 29.00       | 27.65       | 26.50       | 28.30       | 31.10       | 37.65       | -----       | 39.60       | 42.75       | 43.50       | 32.90       |
| Chicago         | 27.35       | 29.30       | 29.05       | 27.35       | 26.40       | 28.25       | 31.40       | 39.35       | 38.30       | 39.80       | 42.65       | 43.05       | 33.52       |
| Los Angeles     | 23.00       | 24.00       | 24.00       | 24.25       | 24.30       | 24.50       | 27.70       | 31.75       | 33.65       | 34.90       | 34.80       | 35.45       | 28.52       |
| St. Louis       | 25.50       | 27.75       | 27.90       | 27.15       | 25.25       | 26.70       | 30.35       | 38.10       | 37.10       | 37.75       | 41.15       | 41.60       | 32.19       |
| San Francisco   | 23.50       | 24.50       | 24.50       | 25.00       | 25.50       | 26.50       | 30.80       | 34.55       | 37.50       | 37.50       | 37.75       | 40.30       | 30.66       |
| Portland, Oreg. | 26.30       | 28.50       | 27.75       | 27.00       | 28.35       | 28.75       | 29.85       | 35.90       | 37.00       | 40.00       | 40.00       | 40.00       | 32.42       |

Bureau of Agricultural Economics; compiled from reports made to the Bureau by its representatives in the various markets.

TABLE 137.—*Sugar beets: Acreage, production, average price per ton received by producers, and value, United States,<sup>1</sup> 1913-34*

| Year | Acreage harvested  | Yield per acre    | Production              | Price per ton  | Farm value, basis average price | Year              | Acreage harvested  | Yield per acre    | Production              | Price per ton  | Farm value, basis average price |
|------|--------------------|-------------------|-------------------------|----------------|---------------------------------|-------------------|--------------------|-------------------|-------------------------|----------------|---------------------------------|
|      | <i>1,000 acres</i> | <i>Short tons</i> | <i>1,000 short tons</i> | <i>Dollars</i> | <i>1,000 dollars</i>            |                   | <i>1,000 acres</i> | <i>Short tons</i> | <i>1,000 short tons</i> | <i>Dollars</i> | <i>1,000 dollars</i>            |
| 1913 | 580                | 10.1              | 5,888                   | 5.69           | 33,491                          | 1924              | 816                | 9.2               | 7,508                   | 7.95           | 59,689                          |
| 1914 | 483                | 11.6              | 5,585                   | 5.45           | 30,433                          | 1925              | 648                | 11.4              | 7,381                   | 6.39           | 47,137                          |
| 1915 | 611                | 10.7              | 6,511                   | 5.67           | 36,950                          | 1926              | 677                | 10.7              | 7,223                   | 7.61           | 54,964                          |
| 1916 | 665                | 9.4               | 6,228                   | 6.12           | 38,139                          | 1927              | 721                | 10.8              | 7,753                   | 7.67           | 59,455                          |
| 1917 | 665                | 9.0               | 5,980                   | 7.39           | 44,192                          | 1928              | 644                | 11.0              | 7,101                   | 7.11           | 50,477                          |
| 1918 | 594                | 10.0              | 5,949                   | 10.00          | 59,494                          | 1929              | 688                | 10.6              | 7,315                   | 7.08           | 51,804                          |
| 1919 | 692                | 9.3               | 6,421                   | 11.74          | 75,420                          | 1930              | 776                | 11.9              | 9,199                   | 7.14           | 65,698                          |
| 1920 | 872                | 9.8               | 8,533                   | 11.63          | 99,324                          | 1931              | 713                | 11.1              | 7,903                   | 5.94           | 46,948                          |
| 1921 | 815                | 9.6               | 7,782                   | 6.35           | 49,392                          | 1932              | 764                | 11.9              | 9,070                   | 5.26           | 47,795                          |
| 1922 | 530                | 9.8               | 5,183                   | 7.91           | 41,017                          | 1933              | 983                | 11.2              | 11,030                  | 5.13           | 56,599                          |
| 1923 | 657                | 10.7              | 7,096                   | 8.99           | 62,965                          | 1934 <sup>2</sup> | 766                | 9.8               | 7,481                   | 5.04           | 37,706                          |

<sup>1</sup> Most years from 1913 to 1923 include a small unknown quantity of beets grown in Canada for Michigan factories.<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board, revised, 1924-28. See introductory text.

TABLE 138.—*Sugar beets: Acreage, yield, production, and average price per ton received by producers, by States, averages, and annual 1933 and 1934*

| State                           | Acreage harvested |             |                   | Yield per acre   |            |                   | Production       |                  |                   | Price for crop of— |                   |
|---------------------------------|-------------------|-------------|-------------------|------------------|------------|-------------------|------------------|------------------|-------------------|--------------------|-------------------|
|                                 | Average, 1927-31  | 1933        | 1934 <sup>1</sup> | Average, 1924-31 | 1933       | 1934 <sup>1</sup> | Average, 1927-31 | 1933             | 1934 <sup>1</sup> | 1933               | 1934 <sup>1</sup> |
|                                 | 1,000 acres       | 1,000 acres | 1,000 acres       | Short tons       | Short tons | Short tons        | 1,000 short tons | 1,000 short tons | 1,000 short tons  | Dol.               | Dol.              |
| Ohio.....                       | 27                | 42          | 39                | 9.0              | 7.8        | 8.0               | 231              | 328              | 312               | 5.71               | -----             |
| Michigan.....                   | 71                | 154         | 117               | 7.6              | 7.8        | 8.5               | 509              | 1,203            | 999               | 5.81               | -----             |
| Nebraska.....                   | 81                | 88          | 60                | 12.8             | 12.1       | 9.2               | 1,028            | 1,067            | 549               | 4.50               | -----             |
| Montana.....                    | 39                | 68          | 64                | 10.8             | 12.3       | 12.3              | 439              | 838              | 786               | 5.46               | -----             |
| Idaho.....                      | 36                | 75          | 34                | 9.9              | 11.2       | 8.6               | 383              | 837              | 294               | 5.16               | -----             |
| Wyoming.....                    | 45                | 52          | 42                | 11.4             | 11.4       | 10.3              | 516              | 593              | 434               | 5.26               | -----             |
| Colorado.....                   | 215               | 209         | 169               | 12.6             | 12.6       | 9.3               | 2,725            | 2,628            | 1,566             | 4.62               | -----             |
| Utah.....                       | 49                | 74          | 32                | 11.4             | 12.3       | 7.8               | 587              | 912              | 250               | 4.80               | -----             |
| California.....                 | 62                | 108         | 106               | 10.1             | 15.0       | 14.9              | 697              | 1,618            | 1,579             | 5.67               | -----             |
| Other States <sup>2</sup> ..... | 84                | 113         | 103               | 8.8              | 8.9        | 6.9               | 739              | 1,006            | 712               | 5.20               | -----             |
| United States.....              | 708               | 983         | 766               | 10.8             | 11.2       | 9.8               | 7,854            | 11,030           | 7,481             | 5.13               | 5.04              |

<sup>1</sup> Preliminary.<sup>2</sup> States producing sugar beets for which figures are not shown above.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 139.—*Sugar beets: Acreage, yield per acre, production, and yield of sugar per short ton of beets sliced, in specified countries, average 1921-25, annual 1933 and 1934*

| Country  | Acreage          |             |                   | Yield per acre   |            |                   | Production       |                  |                   | Yield of raw sugar per short ton of beets sliced |       |                   |
|--|------------------|-------------|-------------------|------------------|------------|-------------------|------------------|------------------|-------------------|--|-------|-------------------|
|  | Average, 1921-25 | 1933        | 1934 <sup>1</sup> | Average, 1921-25 | 1933       | 1934 <sup>1</sup> | Average, 1921-25 | 1933             | 1934 <sup>1</sup> | Average, 1921-25                                 | 1933  | 1934 <sup>2</sup> |
|  | 1,000 acres      | 1,000 acres | 1,000 acres       | Short tons       | Short tons | Short tons        | 1,000 short tons | 1,000 short tons | 1,000 short tons  | Lb.  | Lb.   | Lb.               |
| Canada.....  | 30               | 44          | 52                | 9.8              | 10.4       | 7.9               | 293              | 457              | 413               | 277  | 338   | -----             |
| United States.....   | 693              | 983         | 766               | 10.1             | 11.2       | 9.8               | 6,965            | 11,030           | 7,481             | 298  | 328   | 337               |
| United Kingdom.....  | 23               | 366         | 404               | 8.3              | 10.1       | 10.0              | 190              | 3,690            | 4,030             | 280  | 363   | -----             |
| Sweden.....  | 94               | 125         | 124               | 12.3             | 16.2       | 14.0              | 1,160            | 2,027            | 1,731             | 312  | 335   | 295               |
| Denmark.....   | 83               | 107         | 107               | 11.6             | 18.1       | 8.0               | 966              | 1,940            | 858               | -----  | 330   | 207               |
| Netherlands.....   | 167              | 117         | 104               | 14.4             | 18.4       | 14.6              | 2,402            | 2,147            | 1,521             | -----  | ----- | -----             |
| Belgium.....   | 170              | 129         | 132               | 12.8             | 13.0       | 13.4              | 2,173            | 1,671            | 1,771             | -----  | 289   | 300               |
| France.....  | 413              | 675         | 679               | 10.8             | 12.2       | 13.6              | 4,472            | 8,224            | 9,204             | 266  | ----- | -----             |
| Spain.....   | 184              | 193         | 200               | 8.8              | 12.8       | -----             | 1,610            | 2,480            | -----             | 248  | ----- | -----             |
| Italy.....   | 207              | 202         | 221               | 12.8             | 11.7       | 13.2              | 2,646            | 2,366            | 2,923             | 220  | 284   | 259               |
| Germany.....   | 982              | 751         | 881               | 10.8             | 12.6       | 11.4              | 10,595           | 9,457            | 10,011            | 321  | 345   | 326               |
| Austria.....   | 35               | 115         | 123               | 9.0              | 10.2       | 12.0              | 316              | 1,177            | 1,479             | 323  | 322   | 325               |
| Czechoslovakia.....  | 629              | 358         | 393               | 11.5             | 9.0        | 10.8              | 7,228            | 3,212            | 4,255             | 348  | 368   | 335               |
| Hungary.....   | 133              | 108         | 111               | 8.2              | 9.6        | 9.1               | 1,085            | 1,041            | 1,006             | 271  | 335   | 301               |
| Yugoslavia.....  | 71               | 75          | 79                | 7.6              | 7.5        | 7.3               | 540              | 562              | 573               | -----  | 314   | 241               |
| Rumania.....   | 90               | 107         | 92                | 7.1              | 7.0        | -----             | 702              | 748              | -----             | -----  | ----- | -----             |
| Poland.....  | 326              | 245         | 279               | 9.0              | 8.3        | 10.2              | 2,926            | 2,042            | 2,841             | 317  | 373   | 345               |
| Union of Soviet Socialist Republics.....                         | 676              | 2,996       | 2,906             | 5.4              | 3.3        | 4.3               | 3,647            | 9,921            | 12,445            | 282  | ----- | -----             |
| Other <sup>3</sup> .....   | 41               | 158         | 246               | 7.3              | 8.7        | -----             | 300              | 1,373            | -----             | -----  | ----- | -----             |
| Total, countries reporting acreage and production all years..... | 4,732            | 7,396       | 7,361             | 10.1             | 8.2        | 8.5               | 47,886           | 60,964           | 62,542            | -----  | ----- | -----             |
| Total, all countries reporting.....                              | 5,056            | 7,854       | 7,899             | 9.9              | 8.3        | -----             | 50,216           | 65,565           | -----             | -----  | ----- | -----             |

<sup>1</sup> Preliminary.<sup>2</sup> Compiled from preliminary estimates reported by the International Association for Sugar Statistics.<sup>3</sup> England and Wales only.<sup>4</sup> 1-year only, 1925-26.<sup>5</sup> Includes Switzerland, Bulgaria, Finland, and Australia in the 5-year average. Later years include also Irish Free State, Latvia, Lithuania, and Turkey, in which countries no sugar was produced prior to 1926-27.

Bureau of Agricultural Economics; official sources and International Institute of Agriculture.

TABLE 140.—*Beet sugar: Production, United States, 1925-34*

| Year <sup>1</sup>      | Factories operating | Acreage from which beets were harvested <sup>2</sup> | Beets paid for by factories | Beets sliced     | Sugar produced (chiefly refined) <sup>3</sup> | Analysis of beets               |                                    | Recovery of sucrose from beets <sup>4</sup> |         | Sugar produced per ton of beets |        | Beet pulp produced |                                   |
|------------------------|---------------------|--|-----------------------------|------------------|---|---------------------------------|------------------------------------|---|---------|---------------------------------|--------|--------------------|-----------------------------------|
|                        |                     |  |                             |                  |   | Purity coefficient <sup>4</sup> | Percentage of sucrose <sup>5</sup> | Paid for                                    | Sliced  | Paid for                        | Sliced | Molasses pulp      | Dry pulp other than molasses pulp |
|                        | Number              | 1,000 acres  | 1,000 short tons            | 1,000 short tons | 1,000 short tons                              | Percent                         | Percent                            | Percent                                     | Percent | Lb.                             | Lb.    | 1,000 short tons   | 1,000 short tons                  |
| 1925----               | 88                  | 653  | 7,423                       | 6,993            | 913   | 82.84                           | 14.86                              | 12.30                                       | 13.06   | 246                             | 261    | 74                 | 78                                |
| 1926----               | 78                  | 687  | 7,300                       | 6,782            | 897   | 84.03                           | 14.94                              | 12.29                                       | 13.23   | 246                             | 265    | 74                 | 76                                |
| 1927----               | 83                  | 732  | 7,821                       | 7,443            | 1,093   | 84.60                           | 16.11                              | 13.98                                       | 14.68   | 280                             | 294    | 89                 | 78                                |
| 1928----               | 82                  | 646  | 7,111                       | 6,880            | 1,061   | 85.62                           | 16.73                              | 14.92                                       | 15.42   | 298                             | 308    | 64                 | 75                                |
| 1929----               | 78                  | 694  | 7,366                       | 7,117            | 1,018   | 84.46                           | 15.64                              | 13.74                                       | 14.22   | 275                             | 284    | 111                | 48                                |
| 1930----               | 77                  | 783  | 9,262                       | 8,789            | 1,208   | 83.79                           | 15.22                              | 13.00                                       | 13.70   | 260                             | 274    | 150                | 60                                |
| 1931----               | 66                  | 714  | 7,906                       | 7,659            | 1,156   | 84.55                           | 16.18                              | 14.30                                       | 14.76   | 286                             | 295    | 99                 | 75                                |
| 1932----               | 75                  | 765  | 9,080                       | 8,856            | 1,357   | 85.17                           | 16.41                              | 14.86                                       | 15.23   | 297                             | 305    | 110                | 134                               |
| 1933----               | 84                  | 985  | 11,043                      | 10,778           | 1,642   | 84.83                           | 16.81                              | 14.86                                       | 15.23   | 297                             | 305    | 141                | 134                               |
| 1934 <sup>7</sup> ---- | 75                  | 765  | 7,480                       | 7,358            | 1,154   | 84.85                           | 16.98                              | 15.41                                       | 15.66   | 308                             | 313    | 130                | 92                                |

<sup>1</sup> Year shown is that in which beets were grown. Sugar-making campaign extends into succeeding year.

<sup>2</sup> Including, in some years, a small acreage in Canada used by United States factories.

<sup>3</sup> Includes a small quantity not made from beets, and also that made at the Johnstown, Colo., molasses factory.

<sup>4</sup> Percentages of sucrose (pure sugar) in the total soluble solids of the beets.

<sup>5</sup> Based upon weight of beets sliced, except possibly in a very few factories.

<sup>6</sup> Sucrose actually extracted by factories, including that recovered from beet molasses.

<sup>7</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board. For earlier years see 1934 Yearbook, table 138.

TABLE 141.—*Sugar: Production in continental United States, Hawaii, Puerto Rico and the Philippine Islands, 1909-10 to 1934-35*

| Year beginning July       | Cane (chiefly raw)                         |                        |  |             |                      |                        |            |
|---------------------------|--|------------------------|--|-------------|----------------------|------------------------|------------|
|                           | Total cane and beet (refined) <sup>1</sup> | Beet (chiefly refined) | Continental United States <sup>2</sup> | Puerto Rico | Hawaii               | Philippine Islands     | Total      |
|                           | Short tons                                 | Short tons             | Short tons                             | Short tons  | Short tons           | Short tons             | Short tons |
| 1909-10-----              | 1,791,108                                  | 512,469                | 331,726                                | 346,786     | 517,090              | 108,254                | 1,363,856  |
| 1910-11-----              | 1,955,539                                  | 510,172                | 355,040                                | 349,840     | 566,821              | 208,678                | 1,540,579  |
| 1911-12-----              | 2,108,510                                  | 599,500                | 380,874                                | 371,076     | 595,038              | 281,354                | 1,608,342  |
| 1912-13-----              | 2,087,179                                  | 692,556                | 162,573                                | 398,004     | 546,524              | 345,077                | 1,452,178  |
| 1913-14-----              | 2,304,454                                  | 733,401                | 300,538                                | 351,666     | 612,000              | 408,339                | 1,672,543  |
| 1914-15-----              | 2,282,021                                  | 722,054                | 246,620                                | 346,490     | 646,000              | 421,192                | 1,660,302  |
| 1915-16-----              | 2,404,018                                  | 874,220                | 138,620                                | 483,590     | 592,763              | 412,274                | 1,627,247  |
| 1916-17-----              | 2,590,289                                  | 820,657                | 310,900                                | 503,081     | 644,663              | 426,266                | 1,883,910  |
| 1917-18-----              | 2,411,263                                  | 765,207                | 245,840                                | 453,794     | 576,700              | 474,745                | 1,751,079  |
| 1918-19-----              | 2,399,820                                  | 760,950                | 284,400                                | 406,002     | 600,312              | 453,346                | 1,744,060  |
| 1919-20-----              | 2,559,514                                  | 726,451                | 122,125                                | 485,071     | 555,727              | 466,913                | 1,629,836  |
| 1920-21-----              | 2,761,304                                  | 1,089,021              | 176,114                                | 489,818     | 521,579              | 539,437                | 1,776,948  |
| 1921-22-----              | 2,769,701                                  | 1,020,489              | 327,701                                | 408,325     | 592,000              | 533,189                | 1,861,215  |
| 1922-23-----              | 2,260,865                                  | 675,000                | 295,735                                | 379,172     | 537,000              | 474,326                | 1,667,232  |
| 1923-24-----              | 2,604,292                                  | 881,000                | 164,528                                | 447,570     | 661,000              | 529,061                | 1,832,484  |
| 1924-25-----              | 3,252,954                                  | 1,090,000              | 85,458                                 | 680,411     | 769,000              | 779,100                | 2,267,404  |
| 1925-26-----              | 2,923,225                                  | 913,000                | 139,581                                | 767,246     | 787,000              | 667,362                | 2,137,226  |
| 1926-27-----              | 3,019,707                                  | 897,000                | 47,166                                 | 629,124     | 811,333              | 786,002                | 2,254,535  |
| 1927-28-----              | 3,406,969                                  | 1,093,000              | 70,762                                 | 743,677     | 896,018              | 807,814                | 2,524,201  |
| 1928-29-----              | 3,453,833                                  | 1,061,000              | 132,053                                | 586,761     | 899,101              | 933,954                | 2,551,869  |
| 1929-30-----              | 3,404,023                                  | 1,018,000              | 200,000                                | 866,110     | 912,357              | 981,371                | 2,959,838  |
| 1930-31-----              | 3,950,386                                  | 1,208,000              | 184,000                                | 783,163     | 988,612              | 958,032                | 2,913,807  |
| 1931-32-----              | 4,339,232                                  | 1,156,000              | 156,617                                | 962,335     | 1,025,354            | 1,174,311              | 3,248,617  |
| 1932-33-----              | 4,605,210                                  | 1,357,000              | 222,760                                | 816,337     | 1,025,546            | 1,342,795              | 3,417,438  |
| 1933-34-----              | 5,290,101                                  | 1,642,000              | 205,000                                | 1,103,822   | <sup>3</sup> 952,186 | <sup>3</sup> 1,580,443 | 3,541,451  |
| 1934-35 <sup>4</sup> ---- | 3,811,087                                  | 1,154,000              | 234,000                                | 784,000     | <sup>3</sup> 952,000 | <sup>3</sup> 824,000   | 2,794,000  |

<sup>1</sup> Cane sugar, raw, converted to refined basis by multiplying by the following factors up to year 1931-32: United States, 0.932; Puerto Rico, 0.9393; Hawaii, 0.9358; Philippine Islands, 0.95; beginning with 1931-32, United States, 0.9418; Puerto Rico, 0.9460; Hawaii, 0.9617; Philippine Islands, 0.9460.

<sup>2</sup> Figures for 1909-10 to 1923-24 include Louisiana and Texas; beginning 1924-25, Louisiana only.

<sup>3</sup> Unofficial.

<sup>4</sup> Preliminary.

Bureau of Agricultural Economics; production data compiled from the following sources: United States from the Department of Agriculture, except cane sugar, 1909-10 and 1910-11, which are from Willet & Gray; Hawaii from Hawaiian Sugar Planters' Association; Puerto Rico and Philippine Islands from official sources of those islands.

Figures for earlier years appear in previous issues of the Yearbook.

TABLE 142.—*Cane sugar: Production of Hawaii, 1924-25 to 1932-33*

| Year beginning October | Total<br>acreage<br>in cane | Cane used for sugar       |   |                   | Sugar produced    |   | Sugar<br>made<br>per<br>short<br>ton of<br>cane | Recovery<br>of equiv-<br>alent<br>refined<br>sugar<br>from<br>cane<br>ground <sup>3</sup> |
|------------------------|-----------------------------|---------------------------|---|-------------------|-------------------|---|---|---|
|                        |                             | Acreage<br>har-<br>vested | Aver-<br>age<br>yield<br>per<br>acre <sup>1</sup> | Production        | As made           | Equiva-<br>lent<br>refined <sup>2</sup> |   |   |
|                        | <i>Acres</i>                | <i>Acres</i>              | <i>Short<br/>tons</i>                             | <i>Short tons</i> | <i>Short tons</i> | <i>Short tons</i>                       | <i>Pounds</i>                                   | <i>Percent</i>  |
| 1924-25.....           | 241,000                     | 122,000                   | 51.6  | 6,297,000         | 789,000           | 720,000                                 | 244   | 11.43   |
| 1925-26.....           | 237,774                     | 122,309                   | 53.1  | 6,495,686         | 787,246           | 736,705                                 | 242   | 11.34   |
| 1926-27.....           | 234,808                     | 124,542                   | 56.1  | 6,992,082         | 811,333           | 759,245                                 | 232   | 10.86   |
| 1927-28.....           | 240,769                     | 131,534                   | 58.6  | 7,707,330         | 896,918           | 839,336                                 | 233   | 10.89   |
| 1928-29.....           | 239,858                     | 129,131                   | 57.7  | 7,447,494         | 899,101           | 841,379                                 | 241   | 11.30   |
| 1929-30.....           | 242,761                     | 133,840                   | 58.7  | 7,853,439         | 912,357           | 853,784                                 | 232   | 10.87   |
| 1930-31.....           | 251,533                     | 137,037                   | 61.9  | 8,485,183         | 988,612           | 925,143                                 | 233   | 10.90   |
| 1931-32.....           | 251,876                     | 139,744                   | 63.4  | 8,865,323         | 1,025,354         | 986,083                                 | 231   | 11.12   |
| 1932-33.....           | 254,563                     | 144,959                   | 59.1  | 8,566,781         | 1,035,548         | 995,887                                 | 242   | 11.62   |

<sup>1</sup> The growth of 18 to 22 months.<sup>2</sup> 1 ton of sugar as made is assumed to be equivalent to 0.9358 ton of refined from 1924-25 to 1930-31 and 0.9617 ton of refined from 1931-32 to 1933-34, as recommended by the joint committee on sugar statistics of the Departments of Commerce and Agriculture.<sup>3</sup> Based on tonnage of cane used.

Bureau of Agricultural Economics. Estimates of the Crop Reporting Board prior to 1926; since then data collected through the Hawaiian Sugar Planters' Association. For earlier years see 1934 Yearbook, table 140.

TABLE 143.—*Cane sugar: Production in Louisiana, 1925-34*

| Year <sup>1</sup>       | Fac-<br>tories<br>operat-<br>ing | Cane used for sugar    |   |                                 | Sugar produced                  |   | Recov-<br>ery of<br>equiv-<br>alent<br>refined<br>sugar<br>from<br>cane<br>ground <sup>4</sup> | Sugar<br>made<br>per ton<br>of cane | Molasses made            |                          |                                |                               |
|-------------------------|----------------------------------|------------------------|---|---------------------------------|---------------------------------|---|--|-------------------------------------|--------------------------|--------------------------|--------------------------------|-------------------------------|
|                         |                                  | Acre-<br>age           | Aver-<br>age<br>yield<br>per<br>acre <sup>2</sup> | Pro-<br>duc-<br>tion            | As<br>made                      | Equiv-<br>alent<br>refined <sup>3</sup> |  |                                     | Black-<br>strap          | Total <sup>5</sup>       | Per<br>ton of<br>sugar<br>made | Per<br>ton of<br>cane<br>used |
|                         | <i>Num-<br/>ber</i>              | <i>1,000<br/>acres</i> | <i>Short<br/>tons</i>                             | <i>1,000<br/>short<br/>tons</i> | <i>1,000<br/>short<br/>tons</i> | <i>1,000<br/>short<br/>tons</i>         | <i>Percent</i>   | <i>Lb.</i>                          | <i>1,000<br/>gallons</i> | <i>1,000<br/>gallons</i> | <i>Gal-<br/>lons</i>           | <i>Gal-<br/>lons</i>          |
| 1925.....               | 91                               | 189                    | 14.0  | 2,644                           | 139                             | 130                                     | 4.92   | 105                                 | 12,171                   | 17,783                   | 128                            | 6.7                           |
| 1926.....               | 54                               | 129                    | 6.7   | 864                             | 47                              | 44                                      | 5.09   | 109                                 | 2,745                    | 6,614                    | 141                            | 7.7                           |
| 1927.....               | 46                               | 72                     | 13.4  | 962                             | 71                              | 66                                      | 6.86   | 148                                 | 2,582                    | 6,624                    | 93                             | 6.9                           |
| 1928.....               | 55                               | 115                    | 16.2  | 1,860                           | 132                             | 123                                     | 6.61   | 142                                 | 5,683                    | 13,535                   | 103                            | 7.3                           |
| 1929.....               | 65                               | 155                    | 18.8  | 2,918                           | 200                             | 186                                     | 6.37   | 137                                 | 14,418                   | 19,619                   | 98                             | 6.7                           |
| 1930.....               | 61                               | 150                    | 17.1  | 2,559                           | 184                             | 171                                     | 6.68   | 144                                 | 12,032                   | 16,887                   | 92                             | 6.6                           |
| 1931.....               | 59                               | 148                    | 15.1  | 2,232                           | 157                             | 143                                     | 6.63   | 141                                 | 9,477                    | 14,645                   | 93                             | 6.6                           |
| 1932.....               | 62                               | 186                    | 15.5  | 2,886                           | 223                             | 210                                     | 7.28   | 155                                 | 10,983                   | 16,445                   | 74                             | 5.7                           |
| 1933.....               | 59                               | 172                    | 15.2  | 2,610                           | 205                             | 193                                     | 7.39   | 157                                 | 11,197                   | 16,498                   | 80                             | 6.3                           |
| 1934 <sup>6</sup> ..... | 61                               | 197                    | 15.4  | 3,028                           | 234                             | 220                                     | 7.27   | 155                                 | -----                    | 18,277                   | 78                             | 6.0                           |

<sup>1</sup> Sugar campaign, usually not ended before February following season of growth of cane.<sup>2</sup> The growth of about 9 months.<sup>3</sup> 1 ton of sugar as made is assumed to be equivalent to 0.932 ton of refined for 1925-30, and 0.9418 ton of refined for 1931-34, as recommended by the joint committee on sugar statistics of the Departments of Commerce and Agriculture.<sup>4</sup> Based on tonnage of cane used.<sup>5</sup> For sirup production see table 150.<sup>6</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board. For earlier years see 1934 Yearbook, table 141.

TABLE 144.—*Sugar: Production, trade, and supply available for consumption in continental United States, 1909-10 to 1934-35*

## IN TERMS OF RAW SUGAR

| Year beginning July | Production <sup>1</sup> | Brought in from insular possessions <sup>2</sup> | Imports as sugar <sup>3</sup> | Domestic exports as sugar <sup>4</sup> | Exports in other forms <sup>5</sup> | Available for consumption <sup>6</sup> |               |
|---------------------|-------------------------|--|-------------------------------|--|-------------------------------------|--|---------------|
|                     |                         |  |                               |  |                                     | Total                                  | Per capita    |
|                     | <i>Short tons</i>       | <i>Short tons</i>                                | <i>Short tons</i>             | <i>Short tons</i>                      | <i>Short tons</i>                   | <i>Short tons</i>                      | <i>Pounds</i> |
| 1909-10.....        | 882,630                 | 927,752  | 1,934,754                     | 72,382                                 | 24,351                              | 3,648,403                              | 79.7          |
| 1910-11.....        | 903,475                 | 943,701  | 1,845,279                     | 36,597                                 | 15,966                              | 3,639,891                              | 78.3          |
| 1911-12.....        | 1,005,337               | 1,187,663  | 1,832,424                     | 50,380                                 | 15,160                              | 3,959,883                              | 83.9          |
| 1912-13.....        | 907,070                 | 1,026,972  | 2,266,426                     | 30,963                                 | 19,217                              | 4,150,288                              | 86.6          |
| 1913-14.....        | 1,088,944               | 936,376  | 2,463,252                     | 37,190                                 | 11,892                              | 4,439,489                              | 91.3          |
| 1914-15.....        | 1,022,828               | 1,098,314  | 2,523,963                     | 302,641                                | 13,585                              | 4,334,878                              | 87.9          |
| 1915-16.....        | 1,078,407               | 1,102,057  | 2,689,067                     | 882,864                                | 12,213                              | 3,974,453                              | 79.4          |
| 1916-17.....        | 1,193,107               | 1,203,938  | 2,527,984                     | 676,752                                | 29,211                              | 4,219,066                              | 83.2          |
| 1917-18.....        | 1,068,437               | 975,684  | 2,344,816                     | 305,429                                | 46,131                              | 4,037,377                              | 78.5          |
| 1918-19.....        | 1,102,421               | 1,073,944  | 2,799,962                     | 568,566                                | 36,747                              | 4,371,013                              | 83.8          |
| 1919-20.....        | 903,060                 | 975,735  | 3,812,955                     | 776,502                                | 98,386                              | 4,816,862                              | 91.1          |
| 1920-21.....        | 1,346,811               | 1,076,342  | 3,228,279                     | 319,589                                | 89,491                              | 5,242,352                              | 97.6          |
| 1921-22.....        | 1,424,726               | 1,340,867  | 3,940,777                     | 1,085,349                              | 31,397                              | 5,589,624                              | 102.5         |
| 1922-23.....        | 1,021,360               | 1,235,049  | 4,068,205                     | 412,196                                | 12,568                              | 5,899,849                              | 106.6         |
| 1923-24.....        | 1,111,898               | 1,274,870  | 3,436,955                     | 152,883                                | 24,617                              | 5,846,223                              | 100.5         |
| 1924-25.....        | 1,260,000               | 1,645,319  | 3,931,282                     | 273,470                                | 22,436                              | 6,540,695                              | 114.7         |
| 1925-26.....        | 1,121,000               | 1,981,432  | 3,895,947                     | 325,804                                | 24,998                              | 6,047,627                              | 114.9         |
| 1926-27.....        | 1,011,000               | 1,689,347  | 3,968,997                     | 124,555                                | 26,303                              | 6,518,426                              | 111.1         |
| 1927-28.....        | 1,246,000               | 2,051,659  | 3,415,830                     | 115,866                                | 29,833                              | 6,568,090                              | 110.4         |
| 1928-29.....        | 1,273,000               | 1,974,899  | 4,115,001                     | 139,324                                | 31,894                              | 7,192,282                              | 119.2         |
| 1929-30.....        | 1,294,000               | 2,377,787  | 2,823,173                     | 87,692                                 | 43,320                              | 6,364,548                              | 104.0         |
| 1930-31.....        | 1,482,000               | 2,603,735  | 2,416,398                     | 77,131                                 | 33,026                              | 6,391,976                              | 103.4         |
| 1931-32.....        | 1,400,000               | 2,811,893  | 2,321,442                     | 58,973                                 | 28,522                              | 6,445,840                              | 103.6         |
| 1932-33.....        | 1,682,000               | 3,074,951  | 1,710,999                     | 44,000                                 | 22,437                              | 6,401,513                              | 102.2         |
| 1933-34.....        | 1,970,000               | 3,207,651  | 1,356,330                     | 64,082                                 | 19,361                              | 6,450,538                              | 102.3         |
| 1934-35.....        | 1,475,000               |  |                               |  |                                     |  |               |

IN TERMS OF REFINED SUGAR<sup>7</sup>

|              |           |           |           |           |        |           |       |
|--------------|-----------|-----------|-----------|-----------|--------|-----------|-------|
| 1921-22..... | 1,325,906 | 1,260,894 | 3,686,397 | 1,009,377 | 29,182 | 5,234,638 | 96.0  |
| 1922-23..... | 950,625   | 1,161,351 | 3,805,745 | 383,439   | 11,682 | 5,522,600 | 99.8  |
| 1923-24..... | 1,034,615 | 1,198,777 | 3,214,883 | 142,217   | 22,943 | 5,283,115 | 94.0  |
| 1924-25..... | 1,172,000 | 1,547,587 | 3,674,563 | 254,391   | 20,911 | 6,118,848 | 107.3 |
| 1925-26..... | 1,043,000 | 1,859,332 | 3,634,323 | 303,073   | 23,298 | 6,210,284 | 107.4 |
| 1926-27..... | 941,000   | 1,588,981 | 3,714,064 | 115,865   | 24,514 | 6,103,556 | 104.0 |
| 1927-28..... | 1,159,000 | 1,930,732 | 3,196,443 | 107,704   | 27,805 | 6,150,666 | 103.3 |
| 1928-29..... | 1,184,000 | 1,858,331 | 3,851,311 | 129,846   | 29,726 | 6,734,070 | 111.6 |
| 1929-30..... | 1,204,000 | 2,239,140 | 2,641,709 | 81,167    | 40,375 | 5,963,307 | 97.5  |
| 1930-31..... | 1,379,000 | 2,451,611 | 2,261,187 | 71,884    | 30,781 | 5,969,133 | 96.9  |
| 1931-32..... | 1,304,000 | 2,675,996 | 2,186,307 | 55,541    | 26,862 | 6,083,900 | 97.8  |
| 1932-33..... | 1,567,000 | 2,924,863 | 1,811,418 | 41,439    | 21,131 | 6,040,711 | 96.5  |
| 1933-34..... | 1,835,000 | 3,048,957 | 1,277,392 | 60,353    | 18,234 | 6,082,762 | 96.5  |
| 1934-35..... | 1,374,000 |           |           |           |        |           |       |

<sup>1</sup> Beet and cane sugar only.<sup>2</sup> Duty free, from Hawaii, Puerto Rico, and the Philippine Islands (Virgin Islands included 1917 and subsequently).<sup>3</sup> No account taken of sugar imported in other forms. Imports from the Philippine Islands excluded, reexports deducted.<sup>4</sup> Shipments to Hawaii and Puerto Rico included. Direct exports to foreign countries from Hawaii and Puerto Rico excluded.<sup>5</sup> Sugar used in the manufacture of other commodities for export on which drawback was paid.<sup>6</sup> No account taken of stocks at the beginning or end of year.<sup>7</sup> Raw sugar converted to refined by multiplying by the following factors: 1909-10 to 1930-31, Cuba and Hawaii, 0.9358; Puerto Rico, 0.9393; Philippines, 0.95; all others (Santo Domingo, British West Indies, Louisiana, etc.), 0.932. Beginning 1931-32, Hawaii, 0.9617; Puerto Rico, Philippines and Virgin Islands, 0.946; Cuba and all others 0.9418. Use reciprocal of above factors to reduce refined sugar to raw.

Bureau of Agricultural Economics. Trade figures from the Bureau of Foreign and Domestic Commerce.



TABLE 145.—*Sugar: Production in specified countries, average 1921-22 to 1925-26, annual 1930-31 to 1934-35*

## BEET SUGAR IN TERMS OF RAW SUGAR

| Country                                   | Average,<br>1921-22 to<br>1925-26 | 1930-31              | 1931-32              | 1932-33              | 1933-34 <sup>1</sup> | 1934-35 <sup>1</sup> |
|---|-----------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <b>NORTH AMERICA</b>                      |                                   |                      |                      |                      |                      |                      |
| Canada.....                               | Short tons<br>31,908              | Short tons<br>53,764 | Short tons<br>60,875 | Short tons<br>75,008 | Short tons<br>74,655 | Short tons<br>78,000 |
| United States.....                        | 984,600                           | 1,298,600            | 1,243,000            | 1,459,000            | 1,765,000            | 1,241,000            |
| Total.....                                | 1,016,508                         | 1,352,364            | 1,303,875            | 1,534,008            | 1,839,655            | 1,319,000            |
| <b>EUROPE</b>                             |                                   |                      |                      |                      |                      |                      |
| England and Wales.....                    | 24,385                            | 526,062              | 295,038              | 410,131              | 554,450              | 650,000              |
| Scotland.....                             | ( <sup>2</sup> )                  | 1,758                | 679                  | 844                  | 3,346                |                      |
| Irish Free State.....                     | ( <sup>2</sup> )                  | 28,000               | 6,471                | 28,692               | 38,894               | 82,000               |
| Sweden.....                               | 175,564                           | 205,760              | 158,324              | 259,425              | 335,972              | 295,000              |
| Denmark.....                              | 142,726                           | 175,656              | 127,536              | 199,737              | 268,700              | 101,600              |
| Netherlands.....                          | 324,273                           | 316,200              | 181,673              | 253,570              | 306,466              | 260,000              |
| Belgium.....                              | 346,094                           | 306,894              | 221,113              | 283,850              | 267,977              | 281,000              |
| France.....                               | 624,498                           | 1,298,371            | 963,860              | 1,103,953            | 1,039,361            | 1,153,000            |
| Spain.....                                | 199,414                           | 318,449              | 387,690              | 256,805              | 240,000              | 320,000              |
| Italy.....                                | 308,261                           | 474,904              | 418,121              | 356,130              | 335,642              | 386,000              |
| Switzerland.....                          | 6,698                             | 6,300                | 6,724                | 7,606                | 9,890                | 9,400                |
| Germany.....                              | 1,557,556                         | 2,808,076            | 1,759,594            | 1,199,793            | 1,575,380            | 1,760,558            |
| Austria.....                              | 53,192                            | 165,642              | 179,223              | 181,791              | 187,896              | 248,768              |
| Czechoslovakia.....                       | 1,178,534                         | 1,257,995            | 903,142              | 695,151              | 568,529              | 690,477              |
| Hungary.....                              | 139,801                           | 258,265              | 138,062              | 113,955              | 187,897              | 240,000              |
| Yugoslavia.....                           | 63,482                            | 112,067              | 95,132               | 93,452               | 82,085               | 70,000               |
| Bulgaria.....                             | 22,044                            | 60,205               | 28,126               | 29,505               | 45,796               | 2,200                |
| Rumania.....                              | 76,698                            | 168,220              | 99,180               | 66,138               | 177,700              | 127,000              |
| Poland.....                               | 421,338                           | 855,949              | 548,977              | 459,575              | 377,991              | 473,000              |
| Latvia.....                               | ( <sup>2</sup> )                  | 8,322                | 13,230               | 30,760               | 35,696               | 49,000               |
| Lithuania.....                            | ( <sup>2</sup> )                  | ( <sup>2</sup> )     | 7,231                | 17,848               | 8,910                | 13,000               |
| Finland.....                              | 1,407                             | 4,079                | 4,173                | 6,369                | 8,032                | 10,000               |
| Union of Soviet Socialist Republics.....  | 474,700                           | 1,641,876            | 1,681,000            | 913,000              | 1,194,000            | 1,650,800            |
| Turkey <sup>3</sup> .....                 | ( <sup>2</sup> )                  | 33,400               | 25,108               | 30,239               | 74,100               | 80,000               |
| Total.....                                | 6,140,665                         | 11,037,450           | 8,214,407            | 6,998,340            | 7,924,709            | 8,955,003            |
| <b>ASIA</b>                               |                                   |                      |                      |                      |                      |                      |
| Japan:                                    |                                   |                      |                      |                      |                      |                      |
| Hokkaido.....                             | 9,995                             | 26,583               | 29,871               | 29,601               | 24,960               | 30,000               |
| Chosen.....                               | 625                               | 1,109                | 1,655                | ( <sup>4</sup> )     | ( <sup>4</sup> )     | ( <sup>4</sup> )     |
| Total.....                                | 10,620                            | 27,692               | 31,526               | 29,601               | -----                | -----                |
| <b>OCEANIA</b>                            |                                   |                      |                      |                      |                      |                      |
| Australia.....                            | 3,021                             | 5,706                | 5,878                | 5 6,614              | 5 6,614              | 5 7,716              |
| Total world beet sugar <sup>5</sup> ..... | 7,170,814                         | 12,423,212           | 9,555,686            | 8,568,542            | 9,795,938            | 10,311,719           |

## CANE SUGAR (RAW)

|  |           |           |           |           |           |           |
|--|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>NORTH AND CENTRAL AMERICA AND WEST INDIES</b> |           |           |           |           |           |           |
| United States.....                               | 203,224   | 183,693   | 156,617   | 222,760   | 205,000   | 234,000   |
| Hawaii.....                                      | 675,249   | 988,612   | 1,025,354 | 1,035,546 | 5 952,186 | 5 952,000 |
| Puerto Rico.....                                 | 499,751   | 783,163   | 992,335   | 816,337   | 1,103,822 | 5 784,000 |
| Virgin Islands.....                              | 5,535     | 5 2,000   | 5 4,577   | 5 4,738   | 5 5,289   | 5 5,600   |
| Central America:                                 |           |           |           |           |           |           |
| Guatemala.....                                   | 21,733    | 5 44,628  | 5 39,962  | 5 34,552  | 5 35,840  | 5 28,000  |
| Nicaragua.....                                   | 14,457    | -----     | -----     | -----     | -----     | -----     |
| Salvador.....                                    | 21,200    | 51,210    | 33,289    | -----     | -----     | -----     |
| Mexico.....                                      | 179,160   | 5 287,285 | 5 249,708 | 5 281,016 | 5 195,226 | 5 259,041 |
| West Indies (British):                           |           |           |           |           |           |           |
| Antigua.....                                     | 13,340    | 5,574     | 21,468    | 27,076    | 23,158    | 20,160    |
| Barbados.....                                    | 56,200    | 66,690    | 82,774    | 107,544   | 92,886    | 50,400    |
| Jamaica.....                                     | 39,883    | 56,174    | 65,520    | 62,008    | 81,231    | 84,112    |
| St. Christopher.....                             | 13,985    | 13,464    | 22,365    | 27,065    | 31,653    | 28,000    |
| Trinidad.....                                    | 66,453    | 110,402   | 109,810   | 163,828   | 117,983   | 89,600    |
| Cuba.....  | 4,908,638 | 3,486,848 | 2,815,208 | 2,234,488 | 2,547,219 | 2,592,600 |
| Dominican Republic.....                          | 231,846   | 394,609   | 493,325   | 402,806   | 428,259   | 408,200   |

<sup>1</sup> Preliminary.<sup>2</sup> No sugar produced.<sup>3</sup> Includes Turkey in Asia.<sup>4</sup> The manufacture of beet sugar by the Japan Sugar Co. in Chosen has been discontinued, according to trade reports.<sup>5</sup> Unofficial estimate.<sup>6</sup> Exclusive of production in minor producing countries for which no statistics are available.

TABLE 145.—*Sugar: Production in specified countries, average 1921-22 to 1925-26, annual 1930-31 to 1934-35—Continued*

## CANE SUGAR (RAW)—Continued

| Country   | Average,<br>1921-22 to<br>1925-26 | 1930-31                         | 1931-32                         | 1932-33                         | 1933-34 <sup>1</sup>            | 1934-35 <sup>1</sup>            |
|---|-----------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| NORTH AND CENTRAL AMERICA AND WEST INDIES—continued                                 |                                   |                                 |                                 |                                 |                                 |                                 |
| Haiti.....  | <i>Short tons</i><br>10, 158      | <i>Short tons</i><br>\$ 21, 068 | <i>Short tons</i><br>\$ 23, 461 | <i>Short tons</i><br>\$ 28, 338 | <i>Short tons</i><br>\$ 28, 556 | <i>Short tons</i><br>\$ 30, 240 |
| West Indies (French):   |                                   |                                 |                                 |                                 |                                 |                                 |
| Guadeloupe.....   | 32, 674                           | 20, 805                         | 40, 785                         | 50, 667                         | 36, 008                         | 33, 600                         |
| Martinique.....   | 53, 573                           | \$ 42, 029                      | \$ 50, 579                      | \$ 52, 455                      | \$ 49, 252                      | \$ 44, 800                      |
| Total North and Central American countries and West Indies reporting all years..... | 7, 041, 422                       | 6, 517, 044                     | 6, 303, 348                     | 5, 501, 224                     | 5, 933, 568                     | 5, 639, 553                     |
| EUROPE AND ASIA   |                                   |                                 |                                 |                                 |                                 |                                 |
| Spain.....  | 8, 738                            | \$ 25, 008                      | \$ 28, 373                      | \$ 21, 683                      | \$ 17, 262                      | \$ 18, 739                      |
| India <sup>2</sup> .....  | 3, 247, 800                       | 3, 604, 000                     | 4, 446, 000                     | 5, 246, 080                     | 5, 675, 040                     | 5, 695, 000                     |
| Taiwan.....   | 471, 748                          | 878, 841                        | 1, 090, 249                     | 697, 088                        | 758, 603                        | 1, 101, 198                     |
| Japan.....  | 91, 569                           | 85, 676                         | 122, 907                        | 88, 668                         | 119, 802                        | 122, 471                        |
| Java <sup>3</sup> .....   | 2, 113, 004                       | 3, 095, 270                     | 2, 514, 062                     | 1, 544, 683                     | 691, 738                        | 504, 000                        |
| Philippine Islands.....   | 584, 895                          | 958, 032                        | 1, 174, 311                     | 1, 342, 795                     | \$ 1, 580, 443                  | \$ 824, 000                     |
| Total European and Asiatic countries reporting all years <sup>10</sup> .....        | 5, 932, 859                       | 7, 688, 795                     | 8, 201, 591                     | 7, 598, 202                     | 7, 252, 445                     | 7, 441, 408                     |
| SOUTH AMERICA   |                                   |                                 |                                 |                                 |                                 |                                 |
| Argentina.....  | 288, 008                          | 420, 854                        | 381, 914                        | 383, 854                        | 348, 420                        | 382, 812                        |
| Brazil.....   | 904, 456                          | 1, 032, 787                     | \$ 1, 137, 054                  | \$ 990, 997                     | \$ 721, 420                     | \$ 770, 840                     |
| British Guiana.....   | 112, 297                          | 141, 280                        | 166, 470                        | 159, 012                        | 145, 600                        | 140, 000                        |
| Dutch Guiana.....   | 12, 460                           | 20, 744                         | \$ 22, 566                      | \$ 21, 812                      | \$ 20, 160                      | \$ 22, 400                      |
| Ecuador.....  | 17, 603                           | 23, 208                         | 27, 214                         | 15, 970                         | 22, 400                         | 21, 280                         |
| Peru.....   | 354, 567                          | 470, 000                        | 450, 644                        | 464, 385                        | 468, 478                        | 440, 920                        |
| Venezuela.....  | 21, 423                           | \$ 21, 999                      | \$ 22, 609                      | \$ 26, 123                      | \$ 22, 400                      | \$ 22, 400                      |
| Total South America.....  | 1, 710, 823                       | 2, 130, 872                     | 2, 208, 471                     | 2, 062, 153                     | 1, 748, 878                     | 1, 800, 652                     |
| AFRICA  |                                   |                                 |                                 |                                 |                                 |                                 |
| Egypt.....  | 100, 264                          | 134, 260                        | 162, 474                        | 187, 704                        | 169, 784                        | 168, 000                        |
| Mauritius.....  | 243, 069                          | 243, 564                        | 180, 788                        | 272, 511                        | 288, 207                        | 195, 000                        |
| Union of South Africa.....  | 182, 420                          | 393, 205                        | 325, 899                        | 358, 905                        | 391, 173                        | 355, 000                        |
| Mozambique.....   | 53, 219                           | \$ 85, 421                      | \$ 79, 098                      | \$ 102, 510                     | \$ 104, 730                     | \$ 100, 800                     |
| Reunion.....  | 82, 015                           | 55, 572                         | 47, 312                         | \$ 59, 868                      | \$ 55, 351                      | \$ 71, 650                      |
| Madagascar.....   | 2, 168                            | 5, 181                          | 7, 496                          | 9, 370                          | 9, 150                          | 9, 500                          |
| Total African countries reporting all years.....                                    | 633, 155                          | 917, 203                        | 803, 067                        | 990, 868                        | 1, 048, 385                     | 900, 950z                       |
| OCEANIA   |                                   |                                 |                                 |                                 |                                 |                                 |
| Australia.....  | 411, 638                          | 599, 899                        | 676, 183                        | 595, 110                        | \$ 748, 944                     | \$ 728, 000                     |
| Fiji.....   | 71, 984                           | 103, 190                        | 89, 292                         | \$ 151, 470                     | \$ 130, 047                     | \$ 125, 440                     |
| Total Oceania.....  | 483, 622                          | 703, 089                        | 765, 475                        | 746, 580                        | 878, 991                        | \$ 853, 440                     |
| Total cane sugar producing countries reporting all years.....                       | 15, 801, 831                      | 17, 957, 003                    | 18, 281, 952                    | 16, 899, 027                    | 16, 872, 267                    | 16, 636, 003                    |
| Estimated world total cane sugar <sup>4</sup> .....                                 | 16, 610, 000                      | 19, 107, 000                    | 19, 651, 000                    | 18, 473, 000                    | 18, 634, 000                    | 17, 646, 000                    |
| Total world cane and beet sugar production in countries reporting all years.....    | 22, 972, 695                      | 30, 380, 215                    | 27, 837, 638                    | 25, 467, 569                    | 26, 668, 205                    | 26, 947, 722                    |
| Estimated world total cane and beet sugar <sup>5</sup> .....                        | 23, 781, 000                      | 31, 530, 000                    | 29, 207, 000                    | 27, 042, 000                    | 28, 430, 000                    | 27, 958, 000                    |

<sup>1</sup> Preliminary.<sup>2</sup> Unofficial estimate.<sup>3</sup> The figures quoted for India are for the production of gur, a low grade of sugar polarizing between 50° and 60°.<sup>4</sup> Practically the entire crop is consumed within the country.<sup>5</sup> Figures for Java are for the calendar years 1922-25.<sup>6</sup> Unofficial estimate of production of centrifugal sugar, which usually accounts for about 90 percent of the total sugar production.<sup>7</sup> Production in the Philippine Islands is not included in this total, as the figures quoted for the last 4 years are not comparable with earlier years.

Bureau of Agricultural Economics; official sources, International Institute of Agriculture and Sugar Associations estimates except as otherwise stated.

<sup>8</sup> Figures are for the crop years 1921-22 to 1934-35 for the countries in which the sugar-harvesting season begins in the fall months and is completed during the following calendar year, except in certain cane-sugar producing countries in the Southern Hemisphere, such as Argentina, Australia, Mauritius, Union of South Africa, etc., where the season begins in May or June and is completed in the same calendar year. Production in these countries is for the calendar years 1921-34.

TABLE 146.—*Sugar, raw, cane and beet: Production, world and selected countries, 1909-10 to 1934-35*

| Crop year <sup>1</sup>     | Estimated world total | Estimated world total cane | Estimated world total beet | Selected countries         |                  |                    |                   |                      |                  |                     |                     |
|----------------------------|-----------------------|----------------------------|----------------------------|----------------------------|------------------|--------------------|-------------------|----------------------|------------------|---------------------|---------------------|
|                            |                       |                            |                            | United States <sup>2</sup> | Cuba             | India <sup>3</sup> | Java <sup>4</sup> | Germany <sup>5</sup> | Czecho-slovakia  | Poland <sup>6</sup> | France <sup>7</sup> |
|                            |                       |                            |                            | 1,000 short tons           | 1,000 short tons | 1,000 short tons   | 1,000 short tons  | 1,000 short tons     | 1,000 short tons | 1,000 short tons    | 1,000 short tons    |
| 1909-10.....               | 16,828                | 9,670                      | 7,158                      | 883                        | 2,021            | 2,481              | 1,411             | 2,147                | -----            | -----               | 861                 |
| 1910-11.....               | 18,834                | 9,870                      | 8,964                      | 903                        | 1,661            | 2,587              | 1,617             | 2,770                | -----            | -----               | 763                 |
| 1911-12.....               | 17,908                | 10,622                     | 7,286                      | 1,005                      | 2,124            | 2,745              | 1,550             | 1,552                | -----            | -----               | 546                 |
| 1912-13.....               | 20,542                | 10,896                     | 9,646                      | 907                        | 2,720            | 2,862              | 1,616             | 2,902                | -----            | -----               | 1,029               |
| 1913-14.....               | 21,154                | 11,640                     | 9,514                      | 1,089                      | 2,909            | 2,573              | 1,549             | 2,886                | -----            | -----               | 841                 |
| 1914-15.....               | 20,875                | 11,952                     | 8,923                      | 1,023                      | 2,922            | 2,736              | 1,454             | 2,721                | -----            | 376                 | 355                 |
| 1915-16.....               | 18,885                | 12,278                     | 6,607                      | 1,078                      | 3,368            | 2,949              | 1,797             | 1,678                | -----            | 239                 | 159                 |
| 1916-17.....               | 18,592                | 13,255                     | 5,337                      | 1,193                      | 3,422            | 3,093              | 2,009             | 1,721                | -----            | 293                 | 217                 |
| 1917-18.....               | 20,293                | 14,790                     | 5,503                      | 1,068                      | 3,890            | 3,539              | 1,960             | 1,726                | -----            | 263                 | 235                 |
| 1918-19.....               | 18,604                | 14,076                     | 4,528                      | 1,102                      | 4,491            | 2,752              | 1,473             | 1,297                | <sup>8</sup> 714 | 249                 | 129                 |
| 1919-20.....               | 17,989                | 14,338                     | 3,651                      | 903                        | 4,184            | 3,404              | 1,681             | 774                  | 553              | 106                 | 182                 |
| 1920-21.....               | 19,546                | 14,225                     | 5,321                      | 1,347                      | 4,406            | 2,825              | 1,853             | 1,195                | 797              | 195                 | 358                 |
| 1921-22.....               | 20,578                | 15,095                     | 5,483                      | 1,425                      | 4,517            | 2,928              | 1,994             | 1,434                | 731              | 170                 | 326                 |
| 1922-23.....               | 20,860                | 15,127                     | 5,733                      | 1,022                      | 4,083            | 3,410              | 1,981             | 1,604                | 811              | 335                 | 522                 |
| 1923-24.....               | 22,810                | 16,306                     | 6,504                      | 1,112                      | 4,606            | 3,715              | 2,201             | 1,263                | 1,115            | 423                 | 524                 |
| 1924-25.....               | 26,670                | 17,712                     | 8,958                      | 1,260                      | 5,812            | 2,852              | 2,535             | 1,724                | 1,574            | 540                 | 910                 |
| 1925-26.....               | 27,989                | 18,813                     | 9,176                      | 1,120                      | 5,524            | 3,334              | 2,175             | 1,763                | 1,662            | 638                 | 831                 |
| 1926-27.....               | 26,624                | 18,125                     | 8,499                      | 1,011                      | 5,050            | 3,659              | 2,639             | 1,834                | 1,153            | 634                 | 786                 |
| 1927-28.....               | 28,515                | 18,671                     | 9,844                      | 1,246                      | 4,527            | 3,603              | 3,238             | 1,846                | 1,383            | 658                 | 956                 |
| 1928-29.....               | 30,655                | 20,319                     | 10,336                     | 1,273                      | 5,775            | 3,305              | 3,198             | 2,054                | 1,165            | 824                 | 999                 |
| 1929-30.....               | 30,607                | 20,459                     | 10,148                     | 1,294                      | 5,281            | 3,092              | 3,245             | 2,188                | 1,142            | 1,010               | 1,011               |
| 1930-31.....               | 31,530                | 19,107                     | 12,423                     | 1,482                      | 3,497            | 3,604              | 3,095             | 2,808                | 1,258            | 856                 | 1,298               |
| 1931-32.....               | 29,207                | 19,651                     | 9,556                      | 1,400                      | 2,915            | 4,446              | 2,514             | 1,760                | 908              | 544                 | 964                 |
| 1932-33.....               | 27,042                | 18,473                     | 8,569                      | 1,682                      | 2,234            | 5,246              | 1,545             | 1,200                | 695              | 460                 | 1,104               |
| 1933-34.....               | 28,430                | 18,634                     | 9,796                      | 1,970                      | 2,547            | 5,675              | 1,692             | 1,575                | 599              | 378                 | 1,039               |
| 1934-35 <sup>9</sup> ..... | 27,958                | 17,646                     | 10,312                     | 1,475                      | 2,593            | 5,695              | <sup>10</sup> 504 | 1,761                | 690              | 473                 | 1,153               |

<sup>1</sup> Figures are for the crop years 1909-10 to 1934-35 for the countries in which the sugar production season begins in the fall months and is completed during the following calendar year, except in certain cane-sugar-producing countries where the season begins in May or June and is completed in the same calendar year. Production in these countries is for the calendar years 1909-34.

<sup>2</sup> Production of cane and beet sugar in terms of raw sugar.

<sup>3</sup> The figures quoted for India are for the production of gur, a low grade of sugar polarizing between 50° and 60°. Practically the entire crop is consumed within the country.

<sup>4</sup> All grades of sugar reduced to terms of head sugar, a grade of sugar which contains at least 96.5 percent sucrose. Figures for Java are for the calendar years 1910-35.

<sup>5</sup> Figures for 1909-10 to 1917-18 are for pre-war boundaries.

<sup>6</sup> Figures are incomplete through 1920-21; 1914-15 includes Prussian Poland only; 1915-16 to 1919-20 include Prussian Poland and Congress Poland; 1920-21 includes Prussian Poland, Congress Poland, and Galicia.

<sup>7</sup> Figures for 1909-10 to 1913-19 refer to pre-war boundaries; 1914-15 to 1918-19 are exclusively of invaded territory.

<sup>8</sup> Bohemia, Moravia, and Silesia only.

<sup>9</sup> Preliminary.

<sup>10</sup> Unofficial estimate.

Bureau of Agricultural Economics. Estimated world total sugar production for the period 1895-96 to 1908-9 in 1924 Yearbook, table 386.

TABLE 147.—*Cane sugar, raw (96° centrifugal): Average wholesale price per pound, New York, 1925-34 <sup>1</sup>*

| Year      | Jan.  | Feb.  | Mar.  | Apr.  | May   | June  | July  | Aug.  | Sept. | Oct.  | Nov.  | Dec.  | Average <sup>2</sup> |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------------|
|           | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents                |
| 1925..... | 4.6   | 4.6   | 4.7   | 4.5   | 4.3   | 4.4   | 4.3   | 4.4   | 4.3   | 3.9   | 4.0   | 4.1   | 4.3                  |
| 1926..... | 4.2   | 4.2   | 4.0   | 4.1   | 4.2   | 4.1   | 4.2   | 4.2   | 4.4   | 4.6   | 4.7   | 5.1   | 4.3                  |
| 1927..... | 5.1   | 4.9   | 4.8   | 4.8   | 4.8   | 4.6   | 4.5   | 4.5   | 4.8   | 4.7   | 4.7   | 4.6   | 4.7                  |
| 1928..... | 4.5   | 4.3   | 4.5   | 4.5   | 4.5   | 4.3   | 4.2   | 4.1   | 4.2   | 3.9   | 3.9   | 3.9   | 4.2                  |
| 1929..... | 3.8   | 3.7   | 3.7   | 3.7   | 3.6   | 3.5   | 3.6   | 3.8   | 4.0   | 4.0   | 3.8   | 3.8   | 3.8                  |
| 1930..... | 3.7   | 3.7   | 3.6   | 3.5   | 3.2   | 3.2   | 3.3   | 3.2   | 3.1   | 3.3   | 3.4   | 3.3   | 3.4                  |
| 1931..... | 3.4   | 3.3   | 3.3   | 3.3   | 3.2   | 3.3   | 3.5   | 3.5   | 3.4   | 3.4   | 3.4   | 3.2   | 3.3                  |
| 1932..... | 3.1   | 2.9   | 2.8   | 2.6   | 2.6   | 2.8   | 3.0   | 3.2   | 3.1   | 3.2   | 3.0   | 2.9   | 2.9                  |
| 1933..... | 2.7   | 2.8   | 3.0   | 3.1   | 3.3   | 3.4   | 3.5   | 3.5   | 3.6   | 3.3   | 3.2   | 3.2   | 3.2                  |
| 1934..... | 3.2   | 3.3   | 3.1   | 2.8   | 2.8   | 2.9   | 3.2   | 3.3   | 2.9   | 2.9   | 2.9   | 2.9   | 2.9                  |

<sup>1</sup> Quotations are on basis of duty paid.

<sup>2</sup> Derived from the figures on which the monthly averages are based.

Bureau of Agricultural Economics; compiled from Bureau of Labor Statistics reports. Data for 1890-1924 are available in 1924 Yearbook, table 386.

TABLE 148.—*Sugar, granulated: Average retail price per pound, United States, 1925-34*<sup>1</sup>

| Year | Jan. 15      | Feb. 15      | Mar. 15      | Apr. 15      | May 15       | June 15      | July 15      | Aug. 15      | Sept. 15     | Oct. 15      | Nov. 15      | Dec. 15      | Average      |
|------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|      | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> |
| 1925 | 8.1          | 7.7          | 7.7          | 7.5          | 7.2          | 7.2          | 7.1          | 7.0          | 7.0          | 6.8          | 6.6          | 6.7          | 7.2          |
| 1926 | 6.7          | 6.7          | 6.7          | 6.6          | 6.7          | 6.9          | 6.9          | 7.0          | 7.0          | 7.1          | 7.1          | 7.3          | 6.9          |
| 1927 | 7.5          | 7.5          | 7.4          | 7.3          | 7.3          | 7.3          | 7.4          | 7.3          | 7.2          | 7.2          | 7.2          | 7.1          | 7.3          |
| 1928 | 7.1          | 7.1          | 7.1          | 7.1          | 7.2          | 7.3          | 7.3          | 7.1          | 7.0          | 6.9          | 6.8          | 6.7          | 7.1          |
| 1929 | 6.7          | 6.6          | 6.5          | 6.4          | 6.4          | 6.4          | 6.4          | 6.6          | 6.7          | 6.7          | 6.7          | 6.6          | 6.6          |
| 1930 | 6.6          | 6.5          | 6.4          | 6.3          | 6.3          | 6.1          | 6.1          | 6.1          | 5.9          | 5.8          | 5.9          | 5.9          | 6.2          |
| 1931 | 5.9          | 5.9          | 5.8          | 5.7          | 5.6          | 5.6          | 5.6          | 5.7          | 5.7          | 5.6          | 5.6          | 5.5          | 5.7          |
| 1932 | 5.4          | 5.3          | 5.2          | 5.1          | 4.9          | 4.9          | 5.0          | 5.1          | 5.1          | 5.1          | 5.1          | 5.1          | 5.1          |
| 1933 | 5.1          | 5.0          | 5.0          | 5.1          | 5.3          | 5.4          | 5.5          | 5.6          | 5.7          | 5.7          | 5.6          | 5.5          | 5.4          |
| 1934 | 5.4          | 5.6          | 5.4          | 5.1          | 5.4          | 5.4          | 5.7          | 5.7          | 5.7          | 5.7          | 5.6          | 5.5          | 5.6          |

<sup>1</sup> Data are averages of prices as reported by retail dealers as of the 15th of month in 51 of the larger cities of the United States. Beginning August 1933, prices are reported twice during the month; those shown are nearest the 15th.

Bureau of Agricultural Economics; compiled from Bureau of Labor Statistics retail prices.  
Data for 1913-24 available in 1930 Yearbook, table 162.

TABLE 149.—*Sugar: International trade, average 1925-29, annual 1931-33*

| Country                             | Calendar year     |                   |                   |                   |                   |                   |                   |                   |
|-------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|                                     | Average 1925-29   |                   | 1931              |                   | 1932              |                   | 1933 <sup>1</sup> |                   |
|                                     | Exports           | Imports           | Exports           | Imports           | Exports           | Imports           | Exports           | Imports           |
| PRINCIPAL EXPORTING COUNTRIES       | <i>Short tons</i> | <i>Short tons</i> | <i>Short tons</i> | <i>Short tons</i> | <i>Short tons</i> | <i>Short tons</i> | <i>Short tons</i> | <i>Short tons</i> |
| Cuba                                | 5,082,658         | 525,300           | 525,300           | 20                | 2,890,028         | 15                | 1,283,018         | 2,555             |
| Netherlands Indies                  | 2,380,762         | 3,634,178         | 1,739,182         | 2,985,166         | 464,202           | 2,526,118         | 224,100           | 9                 |
| Czechoslovakia                      | 792,566           | 628,498           | 864,235           | 434,603           | 20                | 1,188,999         | 323,955           | 4                 |
| Philippine Islands                  | 612,260           | 2,398,829         | 957,1,601         | 1,120,563         | 777               | 404,089           | 125,543           | 30                |
| Dominican Republic                  | 353,915           | 196,353           | 239,4             | 484,731           | 777               | 17,793            | 150,504           | 124,358           |
| Peru                                | 332,668           | 106,363           | 990,200           | 358,393           | 208               | 142,333           | 50                |                   |
| Poland                              | 253,202           | 2,291,379         | 977,8,224         | 204,442           | 8,286             | 42,315            | 129,496           | 19                |
| Mauritius                           | 242,199           | 3,197,100         | 3,137             | 218,129           | 6                 | 24,384            | 614               | 48                |
| Australia <sup>2</sup>              | 179,533           | 911,305           | 667,6             | 245,073           | 9,335             | 1,399             | 2,837             |                   |
| Germany                             | 174,357           | 92,758            | 390,677           | 14,411            | 89,606            | 3,456             | 1,399             | 2,837             |
| Belgium                             | 152,164           | 77,890            | 57,802            | 54,984            | 81,679            | 8,286             | 1,399             | 2,837             |
| British Guiana                      | 113,607           | 447,133           | 668,52            | 153,527           | 66                | 1,399             | 2,837             |                   |
| Union of Soviet Socialist Republics | 105,024           | 57,858            | 352,503           | 78                | 83,908            | 45,753            | 42,315            | 7,654             |
| Fiji                                | 92,836            | 171,76            | 089,190           | 147,058           | 195               | 127,496           | 106               |                   |
| Hungary                             | 90,488            | 417,57            | 758,135           | 19,124            | 56                | 24,384            | 614               | 48                |
| Union of South Africa               | 82,951            | 10,307            | 183,127           | 2,956             | 166,813           | 2,824             | 201,969           |                   |
| Trinidad and Tobago                 | 72,520            | 1,564             | 95,336            | 46                | 94,936            | 40                | 118,891           |                   |
| Barbados                            | 61,624            | 517,35            | 553,57            | 1,191             | 83,675            | 1                 |                   |                   |
| Reunion                             | 54,035            | 20,57             | 191,31            | 59,088            | 31                |                   |                   |                   |
| Jamaica                             | 49,676            | 1,081             | 49,609            | 46                | 48,107            | 6                 |                   |                   |
| Mozambique                          | 37,906            | 93,53             | 310,67            | 70,202            | 9                 |                   |                   |                   |
| Brazil                              | 25,076            | 20,12             | 240,1             | 4,602             | 1                 | 28,089            | 0                 |                   |
| Argentina                           | 23,426            | 17,264            | 4,455             | 3,954             | 1,533             | 578               | 3,456             | 129               |
| Nicaragua                           | 8,529             | 408,1             | 822,632           | 1,761             | 75                | 1,399             | 2,837             |                   |
| Madagascar                          | 3,897             | 3,768             | 5,751             | 3,912             | 7,419             | 3,104             | 8,286             |                   |
| Total                               | 11,327,779        | 275,281           | 3,270,688         | 94,927            | 3,772,484         | 183,859           | 4,415,656         | 152,941           |
| PRINCIPAL IMPORTING COUNTRIES       |                   |                   |                   |                   |                   |                   |                   |                   |
| United States <sup>4</sup>          | 167,360           | 4,428,566         | 52,577            | 3,176,259         | 49,004            | 2,971,271         | 50,496            | 2,874,127         |
| United Kingdom                      | 105,263           | 2,135,293         | 119,063           | 2,048,880         | 341,467           | 2,662,671         | 380,024           | 2,295,976         |
| British India                       | 40,084            | 904,568           | 38,084            | 698,310           | 33,878            | 469,360           | 41,447            | 347,042           |
| China                               | 2,072             | 823,225           | 220,716           | 628,145           | 389,726           | 193               | 395,735           |                   |
| Canada                              | 89,914            | 524,446           | 8,771             | 475,765           | 6,224             | 434,178           | 10,183            | 395,735           |
| France                              | 251,691           | 460,753           | 297,863           | 372,806           | 312,095           | 451,432           | 299,731           | 437,030           |
| Japan                               | 204,103           | 414,134           | 176,146           | 218,611           | 97,543            | 44,400            | 151,995           | 146,178           |
| Netherlands                         | 284,204           | 316,951           | 36,366            | 125,990           | 30,506            | 159,627           | 56,469            | 117,090           |
| Switzerland                         | 74                | 148,736           | 523               | 176,465           | 724               | 181,640           | 1,167             | 172,359           |

<sup>1</sup> Preliminary.

<sup>2</sup> Java and Madura only.

<sup>3</sup> International Yearbook of Agricultural Statistics.

<sup>4</sup> Includes imports from Virgin Islands of the United States and Philippine Islands, but does not include shipments from Hawaii and Puerto Rico.

<sup>5</sup> Does not include Manchuria after June 30, 1932.

TABLE 149.—*Sugar: International trade, average 1925-29, annual 1931-33—Continued*

| Country                            | Calendar year   |            |            |            |            |            |                   |            |
|------------------------------------|-----------------|------------|------------|------------|------------|------------|-------------------|------------|
|                                    | Average 1925-29 |            | 1931       |            | 1932       |            | 1933 <sup>1</sup> |            |
|                                    | Exports         | Imports    | Exports    | Imports    | Exports    | Imports    | Exports           | Imports    |
|                                    | Short tons      | Short tons | Short tons | Short tons | Short tons | Short tons | Short tons        | Short tons |
| PRINCIPAL IMPORTING COUNTRIES—CON. |                 |            |            |            |            |            |                   |            |
| Chile.....                         | 133             | 136,205    | 80         | 114,357    | 29         | 106,546    | -----             | 123,297    |
| British Malaya.....                | 31,068          | 125,180    | 12,954     | 112,358    | 17,987     | 109,210    | 13,498            | 97,121     |
| Morocco.....                       | 0               | 121,576    | 0          | 152,888    | 0          | 159,438    | 0                 | 163,638    |
| Austria.....                       | 663             | 114,953    | 147        | 44,282     | 293        | 21,013     | 279               | 1,113      |
| Sweden.....                        | 18              | 110,608    | 74         | 93,104     | 112        | 97,676     | 271               | 13,010     |
| Irish Free State.....              | 0               | 92,080     | 0          | 91,120     | 0          | 96,346     | 0                 | 98,176     |
| Finland.....                       | 0               | 87,238     | 0          | 77,578     | 0          | 64,109     | 0                 | 81,809     |
| Portugal.....                      | 102             | 86,255     | 4          | 73,141     | 5          | 68,567     | -----             | -----      |
| Iran.....                          | 99              | 82,505     | 0          | 47,973     | 0          | 49,887     | -----             | -----      |
| New Zealand.....                   | 739             | 81,102     | 997        | 85,056     | 1,155      | 86,108     | 1,019             | 81,646     |
| Norway.....                        | 0               | 79,493     | 0          | 89,839     | 0          | 81,381     | 0                 | 84,066     |
| Egypt.....                         | 9,341           | 79,282     | 4,087      | 4,578      | 1,043      | 840        | 36,259            | 1,262      |
| Italy.....                         | 4,778           | 66,744     | 11,081     | 14,998     | 12,241     | 13,408     | 8,424             | 12,783     |
| Greece.....                        | 712             | 64,751     | -----      | 68,680     | -----      | 66,215     | -----             | 60,458     |
| Algeria.....                       | 151             | 63,315     | 106        | 80,869     | 345        | 78,930     | -----             | 80,277     |
| Ceylon.....                        | 1               | 61,046     | 3          | 79,750     | 3          | 57,670     | -----             | 65,563     |
| Siam.....                          | 1,648           | 46,472     | 10         | 43,114     | 12         | 43,938     | -----             | -----      |
| Uruguay.....                       | 0               | 43,221     | 3          | 51,801     | 3          | 47,688     | -----             | -----      |
| Latvia.....                        | 20              | 41,655     | 0          | 45,526     | 275        | 32,307     | 772               | 15,890     |
| Denmark.....                       | 3,148           | 29,841     | 192        | 49,850     | 234        | 48,373     | 194               | 4,829      |
| Tunis.....                         | 0               | 29,742     | 0          | 36,810     | 0          | 38,893     | 0                 | 36,422     |
| Lithuania.....                     | 25              | 25,731     | 3269       | 28,217     | 3261       | 16,846     | -----             | 3,510      |
| Anglo-Egyptian Sudan.....          | 0               | 23,812     | 0          | 26,298     | 0          | 13,922     | 0                 | 15,545     |
| Taiwan.....                        | 13,346          | 18,109     | 16,488     | 2          | 347,177    | 3          | -----             | -----      |
| Yugoslavia.....                    | 4,654           | 6,218      | 0          | 1,597      | 0          | 1,234      | 0                 | 99         |
| Gold Coast.....                    | 0               | 5,584      | 0          | 4,239      | 0          | 3,799      | 0                 | -----      |
| Total.....                         | 1,214,711       | 11,879,420 | 776,107    | 9,532,739  | 952,455    | 9,168,649  | 1,052,421         | 8,109,579  |

<sup>1</sup> Preliminary.<sup>2</sup> Year ended Mar. 20 of the following year; beginning 1931, year ended June 21 of following year.<sup>3</sup> 2-year average.<sup>4</sup> Year ended Mar. 31 of following year.

Bureau of Agricultural Economics; official sources except where otherwise noted.

The following kinds and grades have been included under the head of sugar: Brown, white, candied, caramel, chancas (Peru), crystal cube, maple, muscovado, panela. The following have been excluded: "Candy" (meaning confectionery), confectionery, glucose, grape sugar, jaggery, molasses, and sirups.

TABLE 150.—*Sugarcane sirup: Acreage, yield, production, and price per gallon received by producers December 1, by States, averages, and annual 1933 and 1934*

| State               | Acreage harvested for sirup |             |                   | Yield per acre   |       |                   | Production       |            |                   | Price Dec. 1 |       |
|---------------------|-----------------------------|-------------|-------------------|------------------|-------|-------------------|------------------|------------|-------------------|--------------|-------|
|                     | Average, 1927-31            | 1933        | 1934 <sup>1</sup> | Average, 1922-31 | 1933  | 1934 <sup>1</sup> | Average, 1927-31 | 1933       | 1934 <sup>1</sup> | 1933         | 1934  |
|                     | 1,000 acres                 | 1,000 acres | 1,000 acres       | Gal.             | Gal.  | Gal.              | 1,000 gal.       | 1,000 gal. | 1,000 gal.        | Cents        | Cents |
| South Carolina..... | 5                           | 6           | 5                 | 91               | 105   | 105               | 531              | 630        | 525               | 65           | 70    |
| Georgia.....        | 28                          | 33          | 32                | 138              | 125   | 116               | 3,890            | 4,125      | 3,712             | 50           | 50    |
| Florida.....        | 9                           | 10          | 10                | 162              | 150   | 165               | 1,560            | 1,600      | 1,650             | 45           | 50    |
| Alabama.....        | 19                          | 28          | 32                | 116              | 115   | 132               | 2,143            | 3,220      | 4,224             | 55           | 50    |
| Mississippi.....    | 15                          | 19          | 24                | 132              | 167   | 180               | 2,253            | 3,173      | 4,320             | 45           | 42    |
| Arkansas.....       | 1                           | 1           | 1                 | 98               | 135   | 58                | 123              | 135        | 58                | 65           | 75    |
| Louisiana.....      | 19                          | 21          | 27                | 257              | 260   | 259               | 5,598            | 5,458      | 7,001             | 34           | 37    |
| Texas.....          | 7                           | 9           | 8                 | 115              | 164   | 100               | 976              | 1,476      | 800               | 55           | 65    |
| United States.....  | 103                         | 127         | 139               | 154.2            | 155.3 | 160.4             | 17,075           | 19,717     | 22,290            | 46.3         | 45.4  |

<sup>1</sup> Preliminary.<sup>2</sup> Average price for crop-marketing season.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 151.—*Sorgo sirup: Acreage, yield, production, and price per gallon received by producers Dec. 1, by States, averages, and annual 1933 and 1934*

| State               | Acreage harvested for sirup |             |                   | Yield per acre   |         |                   | Production       |               |                   | Price Dec. 1 |       |
|---------------------|-----------------------------|-------------|-------------------|------------------|---------|-------------------|------------------|---------------|-------------------|--------------|-------|
|                     | Average, 1927-31            | 1933        | 1934 <sup>1</sup> | Average, 1922-31 | 1933    | 1934 <sup>1</sup> | Average, 1927-31 | 1933          | 1934 <sup>1</sup> | 1933         | 1934  |
|                     | 1,000 acres                 | 1,000 acres | 1,000 acres       | Gallons          | Gallons | Gallons           | 1,000 gallons    | 1,000 gallons | 1,000 gallons     | Cents        | Cents |
| Indiana.....        | 2                           | 2           | 3                 | 65               | 65      | 75                | 143              | 130           | 225               | 60           | 60    |
| Illinois.....       | 2                           | 2           | 3                 | 66               | 68      | 68                | 126              | 116           | 204               | 65           | 65    |
| Iowa.....           | 3                           | 2           | 2                 | 79               | 75      | 60                | 252              | 150           | 120               | 60           | 75    |
| Missouri.....       | 11                          | 12          | 14                | 53               | 47      | 35                | 613              | 564           | 490               | 55           | 70    |
| Kansas.....         | 2                           | 4           | 2                 | 54               | 43      | 35                | 118              | 172           | 70                | 50           | 65    |
| Virginia.....       | 2                           | 5           | 5                 | 65               | 63      | 67                | 150              | 315           | 335               | 65           | 65    |
| North Carolina..... | 20                          | 24          | 22                | 69               | 75      | 75                | 1,355            | 1,800         | 1,650             | 55           | 60    |
| South Carolina..... | 7                           | 8           | 7                 | 54               | 52      | 53                | 376              | 416           | 371               | 50           | 55    |
| Georgia.....        | 13                          | 17          | 16                | 64               | 64      | 64                | 854              | 1,088         | 1,024             | 48           | 49    |
| Kentucky.....       | 13                          | 14          | 14                | 61               | 62      | 66                | 748              | 868           | 924               | 49           | 50    |
| Tennessee.....      | 21                          | 21          | 21                | 60               | 60      | 55                | 1,258            | 1,260         | 1,155             | 48           | 50    |
| Alabama.....        | 30                          | 48          | 50                | 66               | 68      | 75                | 2,111            | 3,264         | 3,750             | 45           | 45    |
| Mississippi.....    | 18                          | 23          | 24                | 77               | 75      | 81                | 1,421            | 1,725         | 1,944             | 38           | 40    |
| Arkansas.....       | 14                          | 17          | 16                | 56               | 56      | 38                | 796              | 952           | 608               | 49           | 60    |
| Oklahoma.....       | 5                           | 3           | 3                 | 47               | 55      | 20                | 254              | 165           | 60                | 46           | 65    |
| Texas.....          | 19                          | 38          | 26                | 56               | 52      | 33                | 1,108            | 1,976         | 858               | 46           | 55    |
| United States.....  | 182                         | 240         | 228               | 62.6             | 62.3    | 60.5              | 11,683           | 14,961        | 13,788            | 47.9         | 51.1  |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 152.—*Maple sugar and sirup: Production and average price received by producers, United States, 1917-34*

| Year                    | Trees tapped | Sugar made   | Sirup made    | Total product in terms of sugar <sup>1</sup> | Average total product per tree |                       | Price per pound of sugar | Price per gallon of sirup |
|-------------------------|--------------|--------------|---------------|--|--------------------------------|-----------------------|--------------------------|---------------------------|
|                         |              |              |               |  | As sugar <sup>1</sup>          | As sirup <sup>1</sup> |                          |                           |
|                         | 1,000 trees  | 1,000 pounds | 1,000 gallons | 1,000 pounds                                 | Pounds                         | Gallons               | Cents                    | Dollars                   |
| 1917.....               | 17,313       | 10,525       | 4,258         | 44,589                                       | 2.58                           | 0.32                  | -----                    | -----                     |
| 1918.....               | 19,132       | 12,944       | 4,863         | 51,848                                       | 2.71                           | .34                   | -----                    | -----                     |
| 1919.....               | 10,639       | 9,541        | 3,262         | 35,637                                       | 2.14                           | .27                   | -----                    | -----                     |
| 1920.....               | 10,672       | 6,928        | 3,131         | 31,976                                       | 1.92                           | .24                   | -----                    | -----                     |
| 1921.....               | 14,160       | 4,699        | 2,149         | 21,891                                       | 1.55                           | .19                   | -----                    | -----                     |
| 1922.....               | 15,198       | 5,227        | 3,370         | 32,187                                       | 2.12                           | .26                   | -----                    | -----                     |
| 1923.....               | 14,178       | 4,656        | 3,262         | 30,752                                       | 2.17                           | .27                   | -----                    | -----                     |
| 1924.....               | 14,193       | 4,096        | 3,574         | 32,658                                       | 2.30                           | .29                   | 26.0                     | 2.00                      |
| 1925.....               | 14,070       | 3,238        | 2,817         | 25,774                                       | 1.83                           | .23                   | 26.9                     | 2.08                      |
| 1926.....               | 13,948       | 3,585        | 3,504         | 31,617                                       | 2.27                           | .28                   | 29.3                     | 2.12                      |
| 1927.....               | 13,751       | 3,183        | 3,429         | 30,615                                       | 2.23                           | .28                   | 28.7                     | 2.05                      |
| 1928.....               | 13,489       | 2,189        | 2,782         | 24,445                                       | 1.81                           | .23                   | 28.6                     | 2.02                      |
| 1929.....               | 12,858       | 1,362        | 2,361         | 20,250                                       | 1.58                           | .20                   | 30.0                     | 2.03                      |
| 1930.....               | 13,062       | 2,370        | 3,641         | 31,498                                       | 2.41                           | .30                   | 30.1                     | 2.03                      |
| 1931.....               | 12,138       | 1,646        | 2,213         | 19,350                                       | 1.59                           | .20                   | 25.7                     | 1.72                      |
| 1932.....               | 12,091       | 1,623        | 2,412         | 20,919                                       | 1.73                           | .22                   | 24.5                     | 1.51                      |
| 1933.....               | 12,076       | 1,288        | 2,186         | 18,776                                       | 1.55                           | .19                   | 20.8                     | 1.18                      |
| 1934 <sup>2</sup> ..... | 12,158       | 1,271        | 2,395         | 20,431                                       | 1.70                           | .21                   | 24.7                     | 1.33                      |

<sup>1</sup> 1 gallon of sirup taken as equivalent to 8 pounds of sugar.<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board, revised 1919-23. See introductory text.

TABLE 153.—Honey: Monthly average price in specified locations, 1928-34

## EXTRACTED HONEY, PER POUND

| Item, location, and year   | Jan.  | Feb.  | Mar.  | Apr.  | May   | June  | July  | Aug.  | Sept. | Oct.  | Nov.  | Dec.  |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| California White to Water<br>White Orange:<br>F. o. b. southern California<br>shipping points: <sup>1</sup>          | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents |
| 1928.....  | 10    | 10    | 10    | 9½    | 8¾    | 8¾    | 9     | 9¼    | 9¼    | 9½    | 9¾    | 9½    |
| 1929.....  | 9¾    | 9¾    | 9¼    | 9½    | 10    | 10¼   | 11    | 11¼   | 11    | 11    | 12    | ----- |
| 1930.....  | 12¾   | 12¾   | 13½   | 10½   | 8¾    | 8     | 7½    | 7½    | 7½    | 7½    | 7½    | 7½    |
| 1931.....  | 7¼    | 7½    | 7¼    | 6¾    | 6½    | 6¼    | 6¼    | 6¾    | 6¼    | 6½    | 6¾    | 6½    |
| 1932.....  | 6     | 6     | 5¾    | 4¾    | 4¾    | 4¾    | 4¾    | 4¾    | 4¾    | 5½    | 5¾    | 5¾    |
| 1933.....  | 6¾    | 6¾    | 6¼    | 6¼    | 5½    | 5     | 4½    | 5½    | 5¾    | 5¾    | 5¼    | 5¼    |
| 1934.....  | 5¼    | 4¾    | 5     | 4¾    | 4¾    | 5½    | 5½    | 5¾    | 5¾    | 6     | 6¼    | 6¼    |
| New York City: <sup>2</sup>  |       |       |       |       |       |       |       |       |       |       |       |       |
| 1928.....  | ----- | ----- | ----- | ----- | 12½   | 12½   | 12½   | 12½   | 12¾   | 13    | 12¾   | 12½   |
| 1929.....  | 12½   | 12½   | 12½   | 12½   | 12½   | 12½   | 12½   | 12¾   | 13    | 13½   | 13½   | 13½   |
| 1930.....  | 13½   | 13½   | 13½   | 13½   | 12½   | 12½   | 12½   | 12¾   | 12¾   | 12½   | 12½   | 12    |
| 1931.....  | 11¾   | 11¾   | 11¼   | 11    | 11    | 10½   | 10½   | 10½   | 11    | 11    | 10½   | 10½   |
| 1932.....  | 9½    | 9½    | 9½    | 9½    | 9½    | 9½    | 9½    | 8¾    | 8¾    | 8¾    | 9     | 8¾    |
| 1933.....  | 9¼    | 9¼    | 9¼    | 8¾    | 8¾    | 8¾    | 8¼    | 8¼    | 8¼    | 8¾    | 8¾    | 8¾    |
| 1934.....  | 8½    | 8½    | 8¼    | 8¾    | 8¾    | 8½    | 9¼    | 8¾    | 8¾    | 9     | 8¾    | 8¾    |
| Intermountain White to<br>Water White Sweet<br>Clover and Alfalfa:<br>F. o. b. intermountain<br>points: <sup>3</sup> |       |       |       |       |       |       |       |       |       |       |       |       |
| 1928.....  | 7¼    | 7¼    | 7¼    | 7¼    | 7¼    | 7     | 7¼    | 7     | 7¼    | 7¼    | 7     | 7     |
| 1929.....  | 7½    | 7½    | 7¾    | 7½    | 7¾    | 7½    | 7     | 7¾    | 7¼    | 7½    | 7½    | 7½    |
| 1930.....  | 7¼    | 7¼    | 7     | 6¾    | 6¾    | 6¾    | 6¼    | 6¼    | 5¾    | 5¾    | 5¾    | 5¾    |
| 1931.....  | 5¾    | 5½    | 5½    | 5½    | 4¾    | 4¾    | 5½    | 5½    | 5½    | 5     | 5½    | 4¾    |
| 1932.....  | 4¾    | 5     | 5     | 4¾    | 5     | 4¾    | 4¾    | 3¾    | 3¾    | 3¾    | 3¾    | 3¾    |
| 1933.....  | 3¾    | 3¾    | 3¾    | 3¾    | 3¾    | 3¾    | 4     | 4½    | 4¾    | 4¾    | 4¾    | 4¾    |
| 1934.....  | 4¾    | 4¾    | 4¾    | 5     | 5     | 5½    | ----- | 5¼    | 5½    | 5½    | 5½    | 5½    |
| White Clover:<br>F. o. b. New York and<br>North Central<br>States: <sup>4</sup>                                      |       |       |       |       |       |       |       |       |       |       |       |       |
| 1928.....  | 8½    | 8¼    | 8     | 8     | 8     | 8½    | 9¼    | 9     | 8¾    | 8½    | 8½    | 8½    |
| 1929.....  | 8¾    | 8¾    | 9     | 9¼    | 8¾    | 9     | 9½    | 8¾    | 8¾    | 8¼    | 8¼    | 8     |
| 1930.....  | 8¼    | 8¼    | 8¾    | 8¾    | 8¾    | 7¾    | 7¾    | 8     | 7¾    | 7¼    | 7¾    | 7½    |
| 1931.....  | 7¾    | 6¾    | 6¾    | 6¾    | 6¾    | 6½    | 6¾    | 6¾    | 6¾    | 7     | 6¾    | 6¾    |
| 1932.....  | 6¾    | 6¼    | 6¼    | 5¾    | 6     | 5¾    | 6     | 5¾    | 5¾    | 5½    | 5     | 4¾    |
| 1933.....  | 5     | 5     | 4¾    | 5     | 5     | 5     | 5     | 5½    | 5½    | 6     | 6½    | 6     |
| 1934.....  | 6¼    | 6¼    | 6½    | 6½    | 6½    | 6½    | 7     | 6¾    | 7     | 6¾    | 6¾    | 6½    |
| Northeastern Buckwheat:<br>F. o. b. New York and<br>Pennsylvania<br>points: <sup>4</sup>                             |       |       |       |       |       |       |       |       |       |       |       |       |
| 1928.....  | 7¼    | 7¼    | 7¼    | 6¾    | ----- | ----- | ----- | 8     | 7¾    | 7½    | 7½    | 7¼    |
| 1929.....  | 7¾    | 7¼    | 7     | 7¼    | 7½    | 7½    | ----- | 8½    | 7½    | 8     | 7½    | 7¾    |
| 1930.....  | 7¾    | 6¾    | 6¾    | 7¾    | ----- | 7     | ----- | 8     | 6½    | 6½    | 5½    | 6     |
| 1931.....  | 5¾    | 5¾    | 5¾    | 5¾    | ----- | ----- | 5½    | ----- | ----- | 5     | 5     | 5     |
| 1932.....  | 5¼    | 4¾    | 4¾    | 4¾    | 4¾    | ----- | ----- | 4¾    | 4¾    | 4¾    | ----- | 4     |
| 1933.....  | 3¾    | 4     | 3¾    | 3¾    | 4¾    | 4¾    | 3¾    | ----- | 4¾    | 4¾    | 4¾    | 5¾    |
| 1934.....  | 4¾    | 5½    | 5½    | 5½    | 5     | ----- | ----- | 5½    | 5½    | 5½    | 5½    | 5½    |

## COMB HONEY, 24-SECTION CASES

|  |      |      |      |      |      |      |      |      |      |      |      |      |
|--|------|------|------|------|------|------|------|------|------|------|------|------|
| White Clover comb, No. 1<br>and Fancy wrapped:<br>F. o. b. New York and<br>North Central<br>States: <sup>4</sup> | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. |
| 1928.....  | 4.80 | 4.80 | 4.50 | 4.80 | 4.50 | 4.25 | 4.50 | 4.50 | 4.50 | 4.50 | 4.80 | 4.50 |
| 1929.....  | 4.80 | 4.50 | 4.25 | 4.25 | 4.50 | 4.25 | 4.50 | 4.50 | 4.25 | 4.00 | 4.00 | 4.00 |
| 1930.....  | 4.25 | 4.00 | 4.00 | 4.00 | 4.25 | 4.00 | 4.00 | 4.25 | 4.25 | 4.00 | 4.00 | 3.75 |
| 1931.....  | 3.80 | 3.75 | 3.60 | 3.40 | 3.25 | 3.50 | 3.50 | 3.60 | 3.75 | 3.50 | 3.50 | 3.40 |
| 1932.....  | 3.30 | 3.25 | 3.35 | 3.25 | 3.30 | 3.35 | 3.50 | 3.15 | 2.85 | 2.65 | 2.70 | 2.60 |
| 1933.....  | 2.40 | 2.40 | 2.30 | 2.50 | 2.40 | 2.50 | 2.40 | 2.65 | 3.00 | 3.00 | 3.00 | 2.90 |
| 1934.....  | 2.80 | 2.80 | 3.00 | 3.10 | 3.10 | 3.25 | 3.15 | 3.20 | 3.00 | 3.00 | 3.00 | 3.30 |

<sup>1</sup> Price to beekeepers or other shippers in large lots, mostly less than car lots.<sup>2</sup> Sales by original receivers to bottlers, confectioners, bakers, and jobbers.<sup>3</sup> Price to beekeepers and other shippers, in car lots.<sup>4</sup> Price to beekeepers in large lots, mostly less than car lots.

Bureau of Agricultural Economics.

TABLE 154.—*Maple sugar and sirup: Production, by States, average 1927-31, and annual 1933 and 1934*

| State              | Trees tapped           |                        |                        | Sugar made              |                         |                         | Sirup made               |                          |                          |
|--------------------|------------------------|------------------------|------------------------|-------------------------|-------------------------|-------------------------|--------------------------|--------------------------|--------------------------|
|                    | Average,<br>1927-31    | 1933                   | 1934 <sup>1</sup>      | Average,<br>1927-31     | 1933                    | 1934 <sup>1</sup>       | Average,<br>1927-31      | 1933                     | 1934 <sup>1</sup>        |
|                    | <i>1,000<br/>trees</i> | <i>1,000<br/>trees</i> | <i>1,000<br/>trees</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>gallons</i> | <i>1,000<br/>gallons</i> | <i>1,000<br/>gallons</i> |
| Maine.....         | 254                    | 255                    | 260                    | 19                      | <sup>2</sup> 10         | <sup>2</sup> 15         | 37                       | 29                       | 29                       |
| New Hampshire..... | 402                    | 388                    | 380                    | 145                     | 46                      | 59                      | 77                       | 50                       | 71                       |
| Vermont.....       | 5,552                  | 5,290                  | 5,449                  | 1,108                   | 554                     | 678                     | 1,098                    | 625                      | 971                      |
| Massachusetts..... | 269                    | 236                    | 236                    | 89                      | 66                      | 105                     | 62                       | 36                       | 65                       |
| New York.....      | 3,602                  | 3,184                  | 3,216                  | 503                     | 388                     | 284                     | 806                      | 597                      | 668                      |
| Pennsylvania.....  | 838                    | 664                    | 657                    | 142                     | 108                     | 83                      | 225                      | 209                      | 199                      |
| Ohio.....          | 1,301                  | 1,216                  | 1,216                  | 50                      | 32                      | 5                       | 367                      | 413                      | 273                      |
| Michigan.....      | 515                    | 490                    | 436                    | 54                      | 35                      | 13                      | 118                      | 140                      | 72                       |
| Wisconsin.....     | 263                    | 295                    | 251                    | 10                      | 24                      | 11                      | 70                       | 62                       | 30                       |
| Maryland.....      | 63                     | 58                     | 57                     | 29                      | 25                      | 18                      | 25                       | 25                       | 17                       |
| United States..... | 13,060                 | 12,076                 | 12,158                 | 2,150                   | 1,288                   | 1,271                   | 2,885                    | 2,186                    | 2,395                    |

<sup>1</sup> Preliminary.<sup>2</sup> Not including approximately 200,000 lbs. of sugar produced in Somerset County, not on farms.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 155.—*Tobacco, unmanufactured: Acreage, production, value, and foreign trade, United States, 1919-34*

| Year                    | Acreage<br>harvested | Average<br>yield<br>per<br>acre | Production              | Price per<br>pound<br>received<br>by pro-<br>ducers,<br>Dec. 1 <sup>1</sup> | Farm<br>value,<br>basis<br>Dec. 1<br>price | Foreign-trade year beginning<br>July |                         |  |
|-------------------------|----------------------|---------------------------------|-------------------------|---|--|--------------------------------------|-------------------------|--|
|                         |                      |                                 |                         |   |  | Domestic<br>exports <sup>2</sup>     | Imports <sup>2</sup>    | Net ex-<br>ports <sup>2</sup> <sup>3</sup> |
|                         | <i>Acres</i>         | <i>Pounds</i>                   | <i>1,000<br/>pounds</i> | <i>Cents</i>  | <i>1,000<br/>dollars</i>                   | <i>1,000<br/>pounds</i>              | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i>                    |
| 1919.....               | 1,861,480            | 736.8                           | 1,371,504               |   |  |                                      |                         |  |
| 1919.....               | 1,958,500            | 737.4                           | 1,444,206               | 31.2  | 451,171                                    | 648,038                              | 94,005                  | 570,858                                    |
| 1920.....               | 1,934,800            | 780.0                           | 1,509,212               | 17.3  | 260,350                                    | 506,526                              | 58,923                  | 456,477                                    |
| 1921.....               | 1,339,500            | 750.2                           | 1,004,928               | 19.5  | 196,113                                    | 463,389                              | 65,225                  | 403,492                                    |
| 1922.....               | 1,616,200            | 776.1                           | 1,254,304               | 22.8  | 286,417                                    | 454,364                              | 75,786                  | 384,223                                    |
| 1923.....               | 1,855,000            | 818.1                           | 1,517,533               | 19.0  | 288,102                                    | 397,630                              | 54,497                  | 548,287                                    |
| 1924.....               | 1,537,345            | 719.4                           | 1,106,340               |   |  |                                      |                         |  |
| 1924.....               | 1,702,300            | 731.3                           | 1,244,928               | 19.0  | 236,937                                    | 430,702                              | 76,870                  | 355,739                                    |
| 1925.....               | 1,750,700            | 786.0                           | 1,376,008               | 16.8  | 230,642                                    | 537,240                              | 69,974                  | 468,958                                    |
| 1926.....               | 1,628,400            | 791.7                           | 1,289,272               | 17.9  | 231,208                                    | 516,402                              | 92,983                  | 424,651                                    |
| 1927.....               | 1,555,900            | 778.5                           | 1,211,311               | 20.7  | 250,462                                    | 489,996                              | 81,045                  | 411,366                                    |
| 1928.....               | 1,864,400            | 736.5                           | 1,373,214               | 20.0  | 274,136                                    | 565,925                              | 79,284                  | 489,149                                    |
| 1929.....               | 1,888,365            | 771.3                           | 1,456,510               |   |  |                                      |                         |  |
| 1929.....               | 1,987,600            | 773.5                           | 1,537,313               | 18.4  | 282,168                                    | 600,181                              | 63,181                  | 541,312                                    |
| 1930.....               | 2,111,600            | 780.2                           | 1,647,377               | 12.8  | 211,156                                    | 591,035                              | 75,425                  | 517,388                                    |
| 1931.....               | 2,000,000            | 791.8                           | 1,583,567               | 8.2   | 129,689                                    | 432,361                              | 73,375                  | 359,874                                    |
| 1932.....               | 1,411,200            | 727.1                           | 1,026,091               | 10.5  | 107,821                                    | 399,967                              | 59,545                  | 341,455                                    |
| 1933.....               | 1,756,600            | 784.3                           | 1,377,639               | 13.0  | 179,486                                    | 472,630                              | 55,700                  | 416,930                                    |
| 1934 <sup>4</sup> ..... | 1,335,200            | 820.6                           | 1,095,662               | 22.0  | 240,937                                    |                                      |                         |  |

<sup>1</sup> Beginning with 1919 prices are average prices for crop-marketing season.<sup>2</sup> Compiled from Monthly Summary of Foreign Commerce of the United States, June issues 1919-26 January and June issues, 1927-34, and official records of the Bureau of Foreign and Domestic Commerce.<sup>3</sup> Total exports (domestic exports plus foreign) minus imports. Beginning 1933-34, domestic exports minus imports for consumption. (See introductory text.)<sup>4</sup> Preliminary.

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Italic figures are census returns; other acreage, yield, and production figures are estimates of the Crop Reporting Board, revised 1919-28. See introductory text.



TABLE 156.—*Tobacco: Acreage, yield, production, and average price per pound received by producers, by class and type, 1933 and 1934*

| Class and type                             | Type no. | Acreage harvested |                   | Yield per acre |                   | Production       |                   | Price for crop of 1933 |
|--|----------|-------------------|-------------------|----------------|-------------------|------------------|-------------------|------------------------|
|  |          | 1933              | 1934 <sup>1</sup> | 1933           | 1934 <sup>1</sup> | 1933             | 1934 <sup>1</sup> |                        |
| <b>Flue-cured:</b>                         |          | <i>Acres</i>      | <i>Acres</i>      | <i>Lb.</i>     | <i>Lb.</i>        | <i>1,000 lb.</i> | <i>1,000 lb.</i>  | <i>Cents</i>           |
| Old Belt.....                              | 11       | 332,400           | 265,000           | 714            | 748               | 237,237          | 198,350           | 16.6                   |
| Eastern North Carolina Belt.....           | 12       | 360,000           | 270,000           | 810            | 855               | 291,600          | 230,850           | 16.4                   |
| South Carolina Belt.....                   | 13       | 171,800           | 120,400           | 862            | 832               | 148,092          | 100,192           | 12.8                   |
| Georgia-Florida Belt.....                  | 14       | 70,800            | 55,400            | 871            | 634               | 61,654           | 35,128            | 11.3                   |
| Total.....                                 | 11-14    | 935,000           | 710,800           | 790            | 794               | 738,583          | 564,520           | 15.3                   |
| <b>Fire-cured:</b>                         |          |                   |                   |                |                   |                  |                   |                        |
| Virginia.....                              | 21       | 32,800            | 25,600            | 760            | 900               | 24,928           | 23,040            | 6.8                    |
| Clarksville and Hopkinsville.....          | 22       | 97,000            | 88,300            | 805            | 839               | 78,105           | 74,060            | 10.5                   |
| Paducah.....                               | 23       | 34,300            | 32,600            | 643            | 856               | 22,050           | 27,916            | 6.8                    |
| Henderson Stemming.....                    | 24       | 4,000             | 4,700             | 740            | 825               | 2,960            | 3,878             | 6.5                    |
| Total.....                                 | 21-24    | 168,100           | 151,200           | 762            | 852               | 128,043          | 128,894           | 9.1                    |
| <b>Air-cured (light):</b>                  |          |                   |                   |                |                   |                  |                   |                        |
| Burley.....                                | 31       | 508,700           | 348,100           | 754            | 813               | 383,342          | 282,999           | 10.6                   |
| Southern Maryland.....                     | 32       | 34,000            | 32,300            | 600            | 725               | 20,400           | 23,418            | 17.5                   |
| Total.....                                 | 31-32    | 542,700           | 380,400           | 744            | 806               | 403,742          | 306,417           | 10.9                   |
| <b>Air-cured (dark):</b>                   |          |                   |                   |                |                   |                  |                   |                        |
| One Sucker.....                            | 35       | 23,000            | 19,100            | 783            | 849               | 18,006           | 16,215            | 6.7                    |
| Green River.....                           | 36       | 16,000            | 16,800            | 740            | 865               | 11,840           | 14,532            | 7.9                    |
| Virginia sun-cured.....                    | 37       | 2,800             | 4,200             | 720            | 850               | 2,016            | 3,570             | 8.5                    |
| Total.....                                 | 35-37    | 41,800            | 40,100            | 762            | 856               | 31,862           | 34,317            | 7.3                    |
| <b>Cigar-filler:</b>                       |          |                   |                   |                |                   |                  |                   |                        |
| Pennsylvania seed leaf.....                | 41       | 21,000            | 15,000            | 1,000          | 1,150             | 21,000           | 17,250            | 5.5                    |
| Miami Valley.....                          | 42-44    | 14,000            | 13,600            | 726            | 925               | 10,165           | 12,580            | 6.0                    |
| Georgia and Florida sun-grown.....         | 45       | 100               | 300               | 820            | 1,200             | 82               | 360               | 11.0                   |
| Total.....                                 | 41-45    | 35,100            | 28,900            | 890            | 1,045             | 31,247           | 30,190            | 5.7                    |
| <b>Cigar binder:</b>                       |          |                   |                   |                |                   |                  |                   |                        |
| Connecticut Valley broadleaf.....          | 51       | 7,200             | 5,100             | 1,490          | 1,600             | 10,731           | 8,160             | 12.5                   |
| Connecticut Valley Havana seed.....        | 52       | 6,700             | 3,300             | 1,471          | 1,572             | 9,854            | 5,186             | 9.7                    |
| New York and Pennsylvania Havana seed..... | 53       | 700               | 500               | 1,157          | 1,198             | 810              | 599               | 4.0                    |
| Southern Wisconsin.....                    | 54       | 8,400             | 4,700             | 1,290          | 1,370             | 10,836           | 6,439             | 5.5                    |
| Northern Wisconsin.....                    | 55       | 4,500             | 2,900             | 1,213          | 1,273             | 5,457            | 3,692             | 4.8                    |
| Total.....                                 | 51-55    | 27,500            | 16,500            | 1,370          | 1,459             | 37,688           | 24,076            | 8.5                    |
| <b>Cigar wrapper:</b>                      |          |                   |                   |                |                   |                  |                   |                        |
| Connecticut Valley shade grown.....        | 61       | 4,600             | 4,900             | 1,075          | 1,075             | 4,946            | 5,268             | 64.0                   |
| Georgia and Florida shade grown.....       | 62       | 1,300             | 2,000             | 931            | 890               | 1,210            | 1,780             | 32.0                   |
| Total.....                                 | 61-62    | 5,900             | 6,900             | 1,043          | 1,021             | 6,156            | 7,048             | 57.7                   |
| <b>Miscellaneous types:</b>                |          |                   |                   |                |                   |                  |                   |                        |
| Eastern Ohio.....                          | -----    | 200               | 100               | 950            | 950               | 190              | 95                | 4.7                    |
| Louisiana Perique.....                     | -----    | 300               | 300               | 425            | 350               | 128              | 105               | 20.0                   |
| Total.....                                 | -----    | 500               | 400               | 636            | 500               | 318              | 200               | 11.0                   |
| United States.....                         | All      | 1,756,600         | 1,335,200         | 784.3          | 820.6             | 1,377,639        | 1,095,662         | 13.0                   |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 157.—*Tobacco: Acreage, yield, production, and average price per pound received by producers, by States, averages, and annual 1933 and 1934*

| State               | Acreage harvested   |           |                   | Yield per acre      |       |                   | Production          |           |                   | Price for crop of— |                   |
|---------------------|---------------------|-----------|-------------------|---------------------|-------|-------------------|---------------------|-----------|-------------------|--------------------|-------------------|
|                     | Average,<br>1927-31 | 1933      | 1934 <sup>1</sup> | Average,<br>1922-31 | 1933  | 1934 <sup>1</sup> | Average,<br>1927-31 | 1933      | 1934 <sup>1</sup> | 1933               | 1934 <sup>1</sup> |
|                     | Acres               | Acres     | Acres             | Lb.                 | Lb.   | Lb.               | 1,000 lb.           | 1,000 lb. | 1,000 lb.         | Cents              | Cents             |
| Massachusetts.....  | 8,060               | 4,900     | 3,000             | 1,329               | 1,419 | 1,446             | 10,769              | 6,953     | 4,338             | 16.5               | 27.2              |
| Connecticut.....    | 23,180              | 13,600    | 10,300            | 1,300               | 1,366 | 1,386             | 29,900              | 18,578    | 14,276            | 23.2               | 33.9              |
| New York.....       | 1,000               | 400       | 300               | 1,139               | 1,200 | 1,150             | 1,156               | 480       | 345               | 4.0                | 8.5               |
| Pennsylvania.....   | 39,140              | 21,300    | 15,200            | 1,286               | 1,001 | 1,152             | 49,463              | 21,330    | 17,504            | 5.5                | 7.5               |
| Ohio.....           | 43,140              | 33,000    | 24,000            | 861                 | 758   | 897               | 37,573              | 25,015    | 21,527            | 7.9                | 12.2              |
| Indiana.....        | 15,800              | 14,700    | 8,800             | 847                 | 720   | 740               | 12,826              | 10,585    | 6,512             | 8.5                | 14.5              |
| Wisconsin.....      | 37,700              | 12,600    | 7,500             | 1,180               | 1,272 | 1,340             | 46,223              | 16,023    | 10,051            | 5.3                | 7.7               |
| Minnesota.....      | 1,480               | 800       | 1,000             | 1,133               | 900   | 800               | 1,759               | 270       | 80                | 4.0                | 7.0               |
| Missouri.....       | 5,340               | 9,000     | 6,100             | 962                 | 915   | 800               | 5,185               | 8,235     | 3,660             | 10.8               | 15.0              |
| Kansas.....         |                     | 600       | 600               |                     | 810   | 600               |                     | 485       | 360               | 10.8               | 15.0              |
| Maryland.....       | 33,840              | 34,000    | 32,300            | 749                 | 600   | 725               | 23,638              | 20,400    | 23,418            | 17.5               | 13.0              |
| Virginia.....       | 175,000             | 132,000   | 113,000           | 688                 | 735   | 823               | 114,122             | 97,046    | 92,970            | 12.8               | 24.0              |
| West Virginia.....  | 5,940               | 6,700     | 3,000             | 753                 | 645   | 680               | 4,248               | 4,322     | 2,040             | 10.8               | 15.0              |
| North Carolina..... | 710,600             | 687,000   | 514,000           | 658                 | 784   | 815               | 506,763             | 533,859   | 418,802           | 16.0               | 29.2              |
| South Carolina..... | 117,600             | 103,000   | 72,000            | 700                 | 860   | 800               | 83,820              | 88,580    | 57,600            | 12.6               | 21.6              |
| Georgia.....        | 97,600              | 66,000    | 51,000            | 766                 | 831   | 632               | 79,410              | 58,124    | 32,234            | 11.4               | 19.0              |
| Florida.....        | 10,100              | 6,200     | 6,700             | 914                 | 778   | 751               | 8,751               | 4,822     | 5,034             | 16.1               | 28.5              |
| Kentucky.....       | 447,740             | 454,000   | 347,000           | 802                 | 716   | 810               | 347,291             | 325,155   | 281,216           | 10.1               | 15.7              |
| Tennessee.....      | 130,900             | 157,000   | 120,000           | 797                 | 842   | 863               | 107,514             | 132,248   | 103,590           | 10.4               | 15.1              |
| Louisiana.....      | 340                 | 300       | 300               | 424                 | 425   | 350               | 147                 | 123       | 105               | 20.0               | 20.0              |
| United States.....  | 1,903,900           | 1,756,600 | 1,335,200         | 776.4               | 784.3 | 820.6             | 1,470,556           | 1,377,639 | 1,095,662         | 13.0               | 22.0              |

<sup>1</sup> Preliminary.<sup>2</sup> 8-year average.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 158.—*Tobacco: Acreage, yield per acre and production in specified countries, 1932-33 to 1934-35<sup>1</sup>*

| Country   | Acreage     |             |                      | Yield per acre <sup>2</sup> |         |                      | Production   |              |                      |
|---|-------------|-------------|----------------------|-----------------------------|---------|----------------------|--------------|--------------|----------------------|
|   | 1932-33     | 1933-34     | 1934-35 <sup>3</sup> | 1932-33                     | 1933-34 | 1934-35 <sup>3</sup> | 1932-33      | 1933-34      | 1934-35 <sup>3</sup> |
| NORTH AMERICA, CENTRAL AMERICA, AND WEST INDIES | 1,000 acres | 1,000 acres | 1,000 acres          | Lbs.                        | Lbs.    | Lbs.                 | 1,000 pounds | 1,000 pounds | 1,000 pounds         |
| Canada.....                                     | 54          | 46          |                      | 999                         | 976     |                      | 54,094       | 44,873       | 38,120               |
| United States.....                              | 1,411       | 1,757       | 1,335                | 727                         | 784     | 821                  | 1,026,091    | 1,377,639    | 1,095,662            |
| Mexico.....                                     | 33          | 31          |                      | 743                         | 687     |                      | 24,561       | 21,502       |                      |
| Cuba.....                                       | 93          | 112         |                      | 329                         | 373     |                      | 35,190       | 36,873       |                      |
| Dominican Republic.....                         |             |             |                      |                             |         |                      | 11,574       |              |                      |
| Puerto Rico.....                                | 10          | 25          | 46                   | 595                         | 603     | 549                  | 6,000        | 16,783       | 25,000               |
| EUROPE  |             |             |                      |                             |         |                      |              |              |                      |
| Sweden.....                                     | 1           | 1           |                      | 2,042                       | 1,724   |                      | 1,327        | 1,202        |                      |
| Belgium.....                                    | 7           | 7           | 7                    | 1,955                       | 2,011   | 2,029                | 13,688       | 14,077       | 14,201               |
| Germany.....                                    | 27          | 30          | 30                   | 2,321                       | 2,187   |                      | 62,223       | 64,889       |                      |
| Poland.....                                     | 13          | 12          | 10                   | 1,467                       | 1,367   | 1,465                | 18,921       | 15,932       | 15,283               |
| Union of Soviet Socialist Republics.....        | 610         | 465         |                      | 553                         | 802     |                      | 340,015      | 372,952      |                      |
| France.....                                     | 41          | 44          |                      | 1,633                       | 1,434   |                      | 67,716       | 62,675       |                      |
| Switzerland.....                                | 1           | 2           | 2                    | 1,557                       | 1,575   |                      | 1,698        | 2,436        |                      |

<sup>1</sup> Acreage and production figures are for the harvesting season. In the Northern Hemisphere, data for 1932-33, for example, are for crops harvested in the summer and fall of 1932; in the Southern Hemisphere they are for crops harvested in the spring of 1933, except in Netherlands India, where the harvest was largely completed in 1932.<sup>2</sup> Calculated from actual acreage and production, except in instances where rounded figures only were available.<sup>3</sup> Preliminary.<sup>4</sup> Unofficial.

TABLE 158.—*Tobacco: Acreage, yield per acre and production in specified countries, 1932-33 to 1934-35*<sup>1</sup>—Continued

| Country  | Acreage        |                |                      | Yield per acre <sup>2</sup> |         |                      | Production             |                 |                      |
|--|----------------|----------------|----------------------|-----------------------------|---------|----------------------|------------------------|-----------------|----------------------|
|  | 1932-33        | 1933-34        | 1934-35 <sup>3</sup> | 1932-33                     | 1933-34 | 1934-35 <sup>3</sup> | 1932-33                | 1933-34         | 1934-35 <sup>3</sup> |
|  | 1,000<br>acres | 1,000<br>acres | 1,000<br>acres       | Lbs.                        | Lbs.    | Lbs.                 | 1,000<br>pounds        | 1,000<br>pounds | 1,000<br>pounds      |
| <b>EUROPE—continued</b>  |                |                |                      |                             |         |                      |                        |                 |                      |
| Czechoslovakia.....  | 25             | 25             | 25                   | 1,523                       | 1,038   | 1,283                | 37,823                 | 25,957          | 32,079               |
| Hungary.....   | 61             | 45             | 40                   | 1,437                       | 1,169   | 1,154                | 87,073                 | 52,583          | 46,155               |
| Rumania.....   | 25             | 25             | 25                   | 616                         | 555     | -----                | 15,609                 | 13,844          | -----                |
| Spain.....   | 10             | 12             | -----                | 1,622                       | 1,194   | -----                | 16,605                 | 14,330          | -----                |
| Italy.....   | 99             | 88             | 88                   | 1,028                       | 1,112   | 1,032                | 101,632                | 97,842          | 90,831               |
| Yugoslavia.....  | 44             | 22             | 23                   | 857                         | 776     | 865                  | 37,934                 | 17,013          | 19,841               |
| Bulgaria.....  | 50             | 67             | 49                   | 763                         | 805     | 671                  | 38,256                 | 53,915          | 32,872               |
| Greece.....  | 157            | 192            | 185                  | 412                         | 631     | 501                  | 64,497                 | 120,985         | 92,594               |
| <b>ASIA</b>  |                |                |                      |                             |         |                      |                        |                 |                      |
| Turkey.....  | 64             | 116            | 127                  | 626                         | 673     | 611                  | 39,771                 | 77,970          | 77,926               |
| Syria and Lebanon.....   | 12             | 17             | 10                   | 472                         | 395     | 722                  | 5,790                  | 6,712           | 7,216                |
| Palestine.....   | 3              | -----          | -----                | 412                         | -----   | -----                | 1,260                  | -----           | -----                |
| India.....   | 1,212          | -----          | -----                | <sup>5</sup> 1,131          | -----   | -----                | <sup>5</sup> 1,361,920 | -----           | -----                |
| Ceylon.....  | 14             | -----          | -----                | 839                         | 799     | -----                | 30,704                 | 29,652          | -----                |
| Indo-China.....  | 37             | 37             | -----                | 1,599                       | 1,746   | 1,753                | 133,611                | 146,696         | 148,089              |
| Japan.....   | 84             | 84             | 85                   | 1,313                       | 1,065   | -----                | 43,897                 | 35,635          | -----                |
| Chosen (Korea).....  | 33             | 33             | -----                | 1,577                       | -----   | -----                | 2,821                  | -----           | -----                |
| Taiwan (Formosa).....  | 2              | -----          | -----                | 515                         | 499     | -----                | 99,529                 | 92,043          | -----                |
| Philippine Islands.....  | 193            | 184            | -----                | 875                         | 644     | -----                | 59,339                 | 42,965          | -----                |
| Java and Madura <sup>6</sup> .....                                   | 68             | 67             | -----                | 725                         | 1,008   | -----                | 30,559                 | 28,812          | -----                |
| Sumatra <sup>6</sup> .....   | 42             | 29             | -----                | -----                       | -----   | -----                | -----                  | -----           | -----                |
| <b>SOUTH AMERICA</b>   |                |                |                      |                             |         |                      |                        |                 |                      |
| Brazil.....  | -----          | -----          | -----                | -----                       | -----   | -----                | <sup>7</sup> 170,453   | -----           | -----                |
| Chile.....   | 5              | -----          | -----                | 1,648                       | -----   | -----                | 8,746                  | -----           | -----                |
| Argentina.....   | 35             | 20             | -----                | 929                         | 951     | -----                | 32,959                 | 18,903          | -----                |
| Uruguay.....   | 1              | 1              | -----                | 1,180                       | 710     | -----                | 1,511                  | 795             | -----                |
| <b>AFRICA</b>  |                |                |                      |                             |         |                      |                        |                 |                      |
| Algeria.....   | 59             | 42             | 47                   | 635                         | 690     | 751                  | 40,663                 | 28,849          | 35,274               |
| Tunis.....   | 1              | 1              | -----                | 1,052                       | 1,139   | -----                | 1,362                  | 1,125           | -----                |
| Nyasaland <sup>6</sup> .....   | 8              | -----          | -----                | 444                         | -----   | -----                | 3,488                  | -----           | -----                |
| Northern Rhodesia <sup>6</sup> .....                                 | 2              | -----          | -----                | -----                       | -----   | -----                | -----                  | -----           | -----                |
| Southern Rhodesia <sup>6</sup> .....                                 | 32             | 43             | -----                | 485                         | 626     | -----                | 15,675                 | 26,792          | -----                |
| Union of South Africa <sup>6</sup> .....                             | -----          | -----          | -----                | -----                       | -----   | -----                | 9,300                  | 15,215          | -----                |
| Madagascar.....  | 28             | 27             | -----                | 753                         | 625     | -----                | 21,385                 | 16,975          | -----                |
| <b>OCEANIA</b>   |                |                |                      |                             |         |                      |                        |                 |                      |
| Australia.....   | 26             | -----          | -----                | 370                         | -----   | -----                | 9,723                  | 2,652           | -----                |
| New Zealand.....   | 2              | -----          | -----                | 840                         | -----   | -----                | 1,785                  | -----           | -----                |
| Total, all countries reporting acreage and production all years..... | 2,096          | 2,499          | 2,077                | -----                       | -----   | -----                | 1,651,550              | 2,052,953       | 1,733,923            |
| Estimated world total <sup>8</sup> .....                             | -----          | -----          | -----                | -----                       | -----   | -----                | 4,509,000              | -----           | -----                |

See footnotes 1 to 3 on page 453.

<sup>1</sup> Exclusive of North-West Frontier Provinces.<sup>2</sup> Data for European plantations only. In Nyasaland the native production for 1932-33 was 9,132,480 pounds; in the Union of South Africa production on native locations and reserves is estimated at 1,000,000 pounds annually.<sup>3</sup> 1931-32.<sup>4</sup> Exclusive of China. An official estimate of the "average" annual production in 25 of the 28 Provinces, issued in 1932, was 465,000,000 pounds. The production of flue-cured tobacco was estimated at 144,000,000 pounds in 1933-34 and 140,000,000 pounds in 1934-35.

Bureau of Agricultural Economics; compiled from official sources, International Institute of Agriculture and reports of United States consuls, commercial attachés, agricultural attachés, and commodity specialists in foreign countries, except as otherwise stated.

TABLE 159.—*Tobacco, unmanufactured: Production, stocks, supply, disappearance, and price in continental United States, 1919-34*<sup>1</sup>FLUE-CURED, TYPES 11-14<sup>2</sup>

| Year    | Pro-<br>duction        | Stocks<br>Oct. 1,<br>green<br>weight <sup>3</sup> | Total<br>supply        | Dis-<br>ap-<br>pear-<br>ance,<br>begin-<br>ning<br>Oct. 1 | Season aver-<br>age farm<br>price per<br>pound | Year    | Pro-<br>duction        | Stocks<br>Oct. 1,<br>green<br>weight <sup>3</sup> | Total<br>supply        | Dis-<br>ap-<br>pear-<br>ance,<br>begin-<br>ning<br>Oct. 1 | Season aver-<br>age farm<br>price per<br>pound |
|---------|------------------------|---|------------------------|---|--|---------|------------------------|---|------------------------|---|--|
|         | Mil-<br>lion<br>pounds | Mil-<br>lion<br>pounds                            | Mil-<br>lion<br>pounds | Mil-<br>lion<br>pounds                                    | Cents  |         | Mil-<br>lion<br>pounds | Mil-<br>lion<br>pounds                            | Mil-<br>lion<br>pounds | Mil-<br>lion<br>pounds                                    | Cents  |
| 1919... | 476.9                  | 382.6   | 859.5                  | 504.1   | 44.4   | 1927... | 718.8                  | 543.3   | 1,262.1                | 598.9   | 20.5   |
| 1920... | 616.0                  | 358.4   | 971.4                  | 409.1   | 21.5   | 1928... | 739.1                  | 663.2   | 1,402.3                | 707.9   | 17.3   |
| 1921... | 358.8                  | 562.3   | 921.1                  | 403.7   | 21.9   | 1929... | 749.8                  | 694.4   | 1,444.2                | 735.2   | 18.0   |
| 1922... | 415.4                  | 517.4   | 932.8                  | 421.0   | 27.2   | 1930... | 854.3                  | 709.0   | 1,573.3                | 772.4   | 12.0   |
| 1923... | 580.7                  | 511.8   | 1,092.5                | 542.5   | 20.8   | 1931... | 669.9                  | 800.9   | 1,470.8                | 596.9   | 8.4  |
| 1924... | 437.3                  | 550.0   | 987.3                  | 456.7   | 21.6   | 1932... | 376.8                  | 873.9   | 1,250.7                | 569.5   | 11.5   |
| 1925... | 575.1                  | 530.6   | 1,105.7                | 577.8   | 20.0   | 1933... | 733.6                  | 681.2   | 1,419.8                | 650.7   | 15.3   |
| 1926... | 560.1                  | 527.9   | 1,088.0                | 544.7   | 24.9   | 1934... | 564.5                  | 769.1   | 1,333.6                | -----   | -----  |

## VIRGINIA FIRE-CURED, TYPE 21

|         |      |      |       |      |      |         |      |      |      |       |       |
|---------|------|------|-------|------|------|---------|------|------|------|-------|-------|
| 1919... | 29.8 | 42.2 | 72.0  | 34.1 | 24.0 | 1927... | 26.6 | 67.8 | 94.4 | 35.2  | 9.9   |
| 1920... | 45.7 | 37.9 | 83.6  | 41.2 | 9.1  | 1928... | 21.9 | 59.2 | 81.1 | 43.4  | 10.6  |
| 1921... | 24.7 | 42.4 | 67.1  | 37.0 | 18.8 | 1929... | 22.8 | 37.7 | 60.5 | 26.8  | 16.9  |
| 1922... | 49.1 | 30.1 | 79.2  | 46.4 | 19.8 | 1930... | 23.3 | 33.7 | 57.0 | 22.5  | 8.3   |
| 1923... | 43.7 | 32.8 | 76.5  | 35.1 | 18.1 | 1931... | 28.3 | 34.5 | 62.8 | 23.8  | 4.7   |
| 1924... | 43.2 | 41.4 | 84.6  | 32.7 | 19.4 | 1932... | 13.5 | 39.0 | 52.5 | 20.0  | 8.0   |
| 1925... | 42.1 | 51.9 | 94.0  | 33.8 | 16.2 | 1933... | 24.9 | 32.5 | 57.4 | 23.9  | 6.8   |
| 1926... | 43.8 | 60.2 | 104.0 | 36.2 | 7.8  | 1934... | 23.0 | 33.5 | 56.5 | ----- | ----- |

## KENTUCKY AND TENNESSEE FIRE-CURED, TYPES 22 AND 23

|         |       |       |       |       |        |        |         |       |       |       |       |        |        |
|---------|-------|-------|-------|-------|--------|--------|---------|-------|-------|-------|-------|--------|--------|
| 1919... | 238.0 | 153.9 | 391.9 | 196.7 | * 19.1 | * 15.1 | 1924... | 156.5 | 155.4 | 311.9 | 148.2 | * 16.1 | * 10.8 |
| 1920... | 182.4 | 198.2 | 377.6 | 208.5 | * 11.7 | * 9.1  | 1925... | 154.7 | 163.7 | 318.4 | 135.2 | * 9.9  | * 6.9  |
| 1921... | 137.4 | 161.0 | 306.5 | 165.5 | * 13.6 | * 14.2 | 1926... | 135.1 | 183.2 | 318.3 | 143.0 | * 8.6  | * 6.1  |
| 1922... | 186.9 | 149.1 | 327.9 | 175.3 | * 16.4 | * 13.2 | 1927... | 82.7  | 175.3 | 258.0 | 134.4 | * 18.4 | * 12.2 |
| 1923... | 203.2 | 152.6 | 355.8 | 200.4 | * 12.2 | * 10.8 | 1928... | 103.6 | 123.6 | 232.2 | 119.6 | * 15.8 | * 12.6 |

## KENTUCKY AND TENNESSEE FIRE-CURED, TYPE 22

|         |       |       |       |       |      |         |      |       |       |       |       |
|---------|-------|-------|-------|-------|------|---------|------|-------|-------|-------|-------|
| 1929... | 107.6 | 89.9  | 197.5 | 102.8 | 14.2 | 1932... | 73.5 | 129.1 | 207.6 | 57.9  | 6.6   |
| 1930... | 96.0  | 94.7  | 190.7 | 79.9  | 9.9  | 1933... | 73.1 | 149.7 | 227.8 | 92.7  | 10.5  |
| 1931... | 103.7 | 110.8 | 214.5 | 85.4  | 5.8  | 1934... | 74.1 | 135.1 | 209.2 | ----- | ----- |

## KENTUCKY AND TENNESSEE FIRE-CURED, TYPE 23

|         |      |      |      |      |      |         |      |      |      |       |       |
|---------|------|------|------|------|------|---------|------|------|------|-------|-------|
| 1929... | 47.4 | 22.7 | 70.1 | 48.9 | 10.0 | 1932... | 29.5 | 42.3 | 71.8 | 42.6  | 4.6   |
| 1930... | 38.0 | 21.2 | 59.2 | 29.5 | 5.6  | 1933... | 22.0 | 29.2 | 51.2 | 17.8  | 6.8   |
| 1931... | 48.9 | 29.7 | 78.6 | 36.3 | 4.0  | 1934... | 27.9 | 33.4 | 61.3 | ----- | ----- |

## HENDERSON FIRE-CURED, TYPE 24

|         |      |      |      |      |      |         |     |     |      |       |       |
|---------|------|------|------|------|------|---------|-----|-----|------|-------|-------|
| 1919... | 19.5 | 10.2 | 29.7 | 13.1 | 16.0 | 1927... | 4.2 | 8.9 | 13.1 | 7.5   | 9.7   |
| 1920... | 12.5 | 18.6 | 29.1 | 19.2 | 10.0 | 1928... | 6.0 | 5.6 | 11.6 | 10.8  | 13.9  |
| 1921... | 8.3  | 9.9  | 18.2 | 13.5 | 15.0 | 1929... | 9.5 | .8  | 10.3 | 9.4   | 9.5   |
| 1922... | 14.1 | 4.7  | 18.8 | 15.2 | 15.0 | 1930... | 8.9 | .9  | 9.8  | 5.9   | 6.9   |
| 1923... | 14.5 | 3.6  | 18.1 | 13.5 | 12.0 | 1931... | 7.2 | 3.9 | 11.1 | 6.1   | 4.0   |
| 1924... | 14.2 | 4.6  | 18.8 | 11.8 | 12.0 | 1932... | 3.9 | 5.0 | 8.9  | 4.2   | 3.4   |
| 1925... | 14.0 | 7.0  | 21.0 | 12.1 | 7.3  | 1933... | 3.0 | 4.7 | 7.7  | 2.8   | 6.5   |
| 1926... | 9.9  | 8.9  | 18.8 | 9.9  | 7.4  | 1934... | 3.9 | 4.9 | 8.8  | ----- | ----- |

See footnotes at end of table.

TABLE 159.—*Tobacco, unmanufactured: Production, stocks, supply, disappearance, and price in continental United States, 1919-34*—Continued

## BURLEY, TYPE 31

| Year   | Pro-<br>duction        | Stocks<br>Oct. 1,<br>green<br>weight <sup>1</sup> | Total<br>supply   | Dis-<br>ap-<br>pear-<br>ance,<br>begin-<br>ning<br>Oct. 1 | Season aver-<br>age farm<br>price per<br>pound | Year   | Pro-<br>duction        | Stocks<br>Oct. 1,<br>green<br>weight <sup>1</sup> | Total<br>supply   | Dis-<br>ap-<br>pear-<br>ance,<br>begin-<br>ning<br>Oct. 1 | Season aver-<br>age farm<br>price per<br>pound |
|--------|------------------------|---|-------------------|---|--|--------|------------------------|---|-------------------|---|--|
|        | Mill-<br>ion<br>pounds | Million<br>pounds                                 | Million<br>pounds | Mill-<br>ion<br>pounds                                    | Cents  |        | Mill-<br>ion<br>pounds | Million<br>pounds                                 | Million<br>pounds | Mill-<br>ion<br>pounds                                    | Cents  |
| 1919.. | 300.3                  | 288.2   | 588.5             | 257.7   | 33.2   | 1927.. | 176.2                  | 537.6   | 713.8             | 291.3   | 25.9   |
| 1920.. | 287.7                  | 330.8   | 618.5             | 223.2   | 13.5   | 1928.. | 269.1                  | 422.5   | 691.6             | 288.0   | 30.5   |
| 1921.. | 175.7                  | 395.8   | 571.0             | 230.4   | 21.5   | 1929.. | 342.2                  | 403.0   | 745.2             | 297.1   | 21.8   |
| 1922.. | 276.4                  | 340.6   | 617.0             | 208.2   | 28.8   | 1930.. | 357.7                  | 448.1   | 805.8             | 284.2   | 15.5   |
| 1923.. | 340.4                  | 408.8   | 749.2             | 232.5   | 20.0   | 1931.. | 435.3                  | 521.6   | 956.9             | 259.1   | 8.7  |
| 1924.. | 295.8                  | 516.7   | 812.5             | 265.7   | 20.1   | 1932.. | 310.4                  | 697.8   | 1,008.2           | 271.8   | 12.5   |
| 1925.. | 277.8                  | 546.8   | 824.6             | 271.3   | 18.0   | 1933.. | 333.3                  | 736.4   | 1,119.7           | 281.9   | 10.6   |
| 1926.. | 288.8                  | 553.3   | 842.1             | 304.5   | 13.1   | 1934.. | 283.0                  | 837.8   | 1,120.8           | -----   | -----  |

SOUTHERN MARYLAND, TYPE 32<sup>2</sup>

|        |      |      |      |      |      |        |      |      |      |       |       |
|--------|------|------|------|------|------|--------|------|------|------|-------|-------|
| 1919.. | 19.6 | 22.9 | 42.5 | 24.5 | 26.5 | 1927.. | 26.2 | 16.4 | 42.6 | 20.8  | 23.4  |
| 1920.. | 27.1 | 18.0 | 45.1 | 29.7 | 17.8 | 1928.. | 20.5 | 21.8 | 42.3 | 25.0  | 27.2  |
| 1921.. | 18.6 | 15.4 | 34.0 | 22.1 | 16.9 | 1929.. | 24.8 | 16.7 | 41.5 | 23.1  | 27.7  |
| 1922.. | 20.0 | 11.9 | 31.9 | 24.3 | 23.8 | 1930.. | 18.7 | 18.4 | 37.1 | 14.4  | 26.6  |
| 1923.. | 21.4 | 7.6  | 29.0 | 16.1 | 27.7 | 1931.. | 28.1 | 22.7 | 50.8 | 17.1  | 15.0  |
| 1924.. | 24.5 | 12.9 | 37.4 | 21.1 | 22.7 | 1932.. | 27.1 | 33.7 | 60.8 | 20.2  | 17.0  |
| 1925.. | 24.7 | 16.3 | 41.0 | 20.9 | 23.7 | 1933.. | 20.4 | 40.6 | 61.0 | 23.4  | 17.5  |
| 1926.. | 26.0 | 20.1 | 46.1 | 29.7 | 20.2 | 1934.. | 23.4 | 37.6 | 61.0 | ----- | ----- |

## ONE SUCKER, TYPE 35

|        |      |      |       |      |      |        |      |      |      |       |       |
|--------|------|------|-------|------|------|--------|------|------|------|-------|-------|
| 1919.. | 68.7 | 37.2 | 105.9 | 54.5 | 14.2 | 1927.. | 13.1 | 47.4 | 60.5 | 30.0  | 10.6  |
| 1920.. | 53.6 | 51.4 | 105.0 | 50.6 | 7.2  | 1928.. | 20.0 | 30.5 | 50.5 | 26.3  | 12.4  |
| 1921.. | 28.3 | 54.4 | 82.7  | 41.1 | 12.2 | 1929.. | 29.9 | 24.2 | 54.1 | 25.3  | 10.5  |
| 1922.. | 52.2 | 41.6 | 93.8  | 55.3 | 12.8 | 1930.. | 29.4 | 28.8 | 58.2 | 21.7  | 7.0   |
| 1923.. | 55.1 | 38.5 | 93.6  | 46.3 | 9.9  | 1931.. | 28.7 | 36.5 | 65.2 | 27.2  | 3.4   |
| 1924.. | 39.0 | 47.3 | 86.3  | 38.3 | 11.2 | 1932.. | 18.2 | 38.0 | 56.2 | 21.8  | 4.8   |
| 1925.. | 35.5 | 48.0 | 83.5  | 26.9 | 8.4  | 1933.. | 13.0 | 34.4 | 52.4 | 16.4  | 6.7   |
| 1926.. | 31.2 | 56.6 | 87.8  | 40.4 | 6.4  | 1934.. | 10.2 | 36.0 | 52.2 | ----- | ----- |

## GREEN RIVER, TYPE 36

|        |      |      |       |      |      |        |      |      |      |       |       |
|--------|------|------|-------|------|------|--------|------|------|------|-------|-------|
| 1919.. | 60.1 | 49.3 | 109.4 | 51.4 | 16.0 | 1927.. | 18.1 | 57.2 | 75.3 | 27.8  | 9.1   |
| 1920.. | 47.5 | 58.0 | 105.5 | 51.8 | 9.0  | 1928.. | 18.9 | 47.5 | 66.4 | 30.1  | 11.5  |
| 1921.. | 34.6 | 53.7 | 88.3  | 41.8 | 15.0 | 1929.. | 27.4 | 36.3 | 63.7 | 35.8  | 10.7  |
| 1922.. | 57.2 | 46.5 | 103.7 | 41.6 | 10.0 | 1930.. | 28.3 | 27.9 | 56.2 | 27.7  | 8.9   |
| 1923.. | 59.0 | 62.1 | 121.1 | 56.3 | 11.0 | 1931.. | 41.8 | 28.5 | 70.3 | 27.8  | 3.3   |
| 1924.. | 47.6 | 64.8 | 112.4 | 51.0 | 11.0 | 1932.. | 19.9 | 42.5 | 62.4 | 19.7  | 3.4   |
| 1925.. | 51.0 | 61.4 | 112.4 | 50.9 | 6.9  | 1933.. | 11.8 | 42.7 | 54.5 | 17.6  | 7.9   |
| 1926.. | 40.0 | 61.5 | 101.5 | 44.3 | 7.4  | 1934.. | 14.5 | 30.9 | 61.4 | ----- | ----- |

## VIRGINIA SUN-CURED, TYPE 37

|        |     |      |      |     |      |        |     |     |      |       |       |
|--------|-----|------|------|-----|------|--------|-----|-----|------|-------|-------|
| 1919.. | 6.0 | 10.9 | 16.0 | 4.8 | 28.0 | 1927.. | 5.5 | 7.6 | 13.1 | 6.6   | 13.1  |
| 1920.. | 9.1 | 12.1 | 21.2 | 9.0 | 9.2  | 1928.. | 5.0 | 6.5 | 11.5 | 4.7   | 10.1  |
| 1921.. | 4.0 | 12.2 | 16.2 | 5.6 | 18.2 | 1929.. | 4.1 | 6.8 | 10.9 | 6.0   | 13.2  |
| 1922.. | 8.2 | 10.6 | 18.8 | 8.6 | 14.3 | 1930.. | 3.4 | 4.9 | 8.3  | 3.8   | 7.7   |
| 1923.. | 6.2 | 10.2 | 16.4 | 8.6 | 13.2 | 1931.. | 3.2 | 4.5 | 7.7  | 3.3   | 5.3   |
| 1924.. | 5.6 | 7.8  | 13.4 | 8.1 | 14.6 | 1932.. | 1.3 | 4.4 | 5.7  | 1.6   | 6.1   |
| 1925.. | 5.7 | 5.3  | 11.0 | 5.6 | 16.4 | 1933.. | 2.0 | 4.1 | 6.1  | 3.5   | 8.5   |
| 1926.. | 7.2 | 5.4  | 12.6 | 5.0 | 9.4  | 1934.. | 3.6 | 2.6 | 6.2  | ----- | ----- |

PENNSYLVANIA SEED LEAF, TYPE 41<sup>7</sup>

|        |      |       |       |      |      |        |      |       |       |       |       |
|--------|------|-------|-------|------|------|--------|------|-------|-------|-------|-------|
| 1919.. | 55.7 | 106.0 | 161.7 | 47.9 | 18.0 | 1927.. | 46.6 | 108.8 | 155.4 | 45.9  | 12.9  |
| 1920.. | 62.0 | 113.8 | 175.8 | 68.0 | 11.8 | 1928.. | 50.7 | 109.5 | 160.2 | 52.0  | 13.9  |
| 1921.. | 57.9 | 107.8 | 165.7 | 49.1 | 14.3 | 1929.. | 50.8 | 108.2 | 159.0 | 55.2  | 12.0  |
| 1922.. | 54.4 | 116.6 | 171.0 | 43.0 | 15.8 | 1930.. | 39.4 | 103.8 | 143.2 | 45.6  | 6.4   |
| 1923.. | 54.7 | 128.0 | 182.7 | 40.9 | 18.0 | 1931.. | 57.1 | 97.6  | 154.7 | 15.9  | 7.4   |
| 1924.. | 66.8 | 141.8 | 198.6 | 53.9 | 15.6 | 1932.. | 45.9 | 138.8 | 184.7 | 57.7  | 5.2   |
| 1925.. | 56.4 | 144.7 | 201.1 | 66.6 | 10.0 | 1933.. | 21.0 | 127.0 | 148.0 | 30.8  | 5.5   |
| 1926.. | 43.9 | 134.5 | 178.4 | 69.6 | 10.3 | 1934.. | 17.2 | 117.2 | 134.4 | ----- | ----- |

See footnotes at end of table.

TABLE 159.—*Tobacco, unmanufactured: Production, stocks, supply, disappearance, and price in continental United States, 1919-34*—Continued

## MIAMI VALLEY, TYPES 42-44

| Year   | Pro-<br>duction                 | Stocks<br>Oct. 1,<br>green<br>weight <sup>1</sup> | Total<br>supply           | Dis-<br>ap-<br>pear-<br>ance,<br>begin-<br>ning<br>Oct. 1 | Season aver-<br>age farm<br>price per<br>pound | Year   | Pro-<br>duction                 | Stocks<br>Oct. 1,<br>green<br>weight <sup>1</sup> | Total<br>supply           | Dis-<br>ap-<br>pear-<br>ance,<br>begin-<br>ning<br>Oct. 1 | Season aver-<br>age farm<br>price per<br>pound |
|--------|---------------------------------|---|---------------------------|---|--|--------|---------------------------------|---|---------------------------|---|--|
|        | <i>Mill-<br/>ion<br/>pounds</i> | <i>Million<br/>pounds</i>                         | <i>Million<br/>pounds</i> | <i>Mill-<br/>ion<br/>pounds</i>                           | <i>Cents</i>                                   |        | <i>Mill-<br/>ion<br/>pounds</i> | <i>Million<br/>pounds</i>                         | <i>Million<br/>pounds</i> | <i>Mill-<br/>ion<br/>pounds</i>                           | <i>Cents</i>                                   |
| 1919.. | 39.0                            | 88.1  | 127.1                     | 25.6  | 20.0   | 1927.. | 12.2                            | 73.7  | 85.9                      | 24.1  | 15.6   |
| 1920.. | 38.6                            | 101.5   | 140.1                     | 40.3  | 16.0   | 1928.. | 15.6                            | 61.8  | 77.4                      | 25.5  | 17.5   |
| 1921.. | 28.2                            | 99.8  | 128.0                     | 33.9  | 11.0   | 1929.. | 20.7                            | 51.9  | 72.6                      | 25.5  | 13.8   |
| 1922.. | 26.6                            | 94.1  | 120.7                     | 25.9  | 14.0   | 1930.. | 32.3                            | 47.1  | 79.4                      | 10.3  | 10.1   |
| 1923.. | 25.9                            | 94.8  | 120.7                     | 26.3  | 13.0   | 1931.. | 33.5                            | 69.1  | 102.6                     | 28.9  | 5.5  |
| 1924.. | 25.2                            | 94.4  | 119.6                     | 47.7  | 13.0   | 1932.. | 21.7                            | 73.7  | 95.4                      | 25.7  | 4.0  |
| 1925.. | 34.1                            | 71.9  | 106.0                     | 14.5  | 11.4   | 1933.. | 10.2                            | 69.7  | 79.9                      | 9.2   | 6.0  |
| 1926.. | 21.8                            | 91.5  | 113.3                     | 39.6  | 8.5  | 1934.. | 12.6                            | 70.7  | 83.3                      | -----   | -----  |

## GEORGIA AND FLORIDA SUN-GROWN AND SHADE-GROWN, TYPES 45 AND 62

|        |     |      |      |     |         |         |        |     |     |      |     |         |         |
|--------|-----|------|------|-----|---------|---------|--------|-----|-----|------|-----|---------|---------|
| 1919.. | 6.0 | 7.8  | 13.8 | 5.3 | \$ 20.4 | \$ 65.0 | 1924.. | 4.7 | 8.5 | 13.2 | 6.3 | \$ 20.1 | \$ 60.0 |
| 1920.. | 5.7 | 8.5  | 14.2 | 3.5 | \$ 19.0 | \$ 60.0 | 1925.. | 3.4 | 6.9 | 10.3 | 3.9 | \$ 20.0 | \$ 65.0 |
| 1921.. | 5.0 | 10.7 | 15.7 | 5.2 | \$ 9.9  | \$ 60.0 | 1926.. | 4.1 | 6.4 | 10.5 | 4.2 | \$ 20.0 | \$ 65.0 |
| 1922.. | 4.8 | 10.5 | 15.3 | 5.9 | \$ 12.0 | \$ 50.4 | 1927.. | 5.2 | 6.3 | 11.5 | 2.4 | \$ 20.0 | \$ 65.0 |
| 1923.. | 6.0 | 9.4  | 15.4 | 6.9 | \$ 21.0 | \$ 58.0 | 1928.. | 5.5 | 9.1 | 14.6 | 5.7 | \$ 20.0 | \$ 55.0 |

## GEORGIA AND FLORIDA SUN-GROWN, TYPE 45

|        |     |     |     |     |      |        |    |     |     |       |       |
|--------|-----|-----|-----|-----|------|--------|----|-----|-----|-------|-------|
| 1929.. | 1.9 | 2.9 | 4.8 | 1.4 | 20.0 | 1932.. | .2 | 3.2 | 3.4 | .7    | 10.0  |
| 1930.. | 1.5 | 3.4 | 4.9 | 1.3 | 20.0 | 1933.. | .1 | 2.7 | 2.8 | .3    | 11.0  |
| 1931.. | 1.1 | 3.6 | 4.7 | 1.5 | 15.0 | 1934.. | .4 | 2.5 | 2.9 | ----- | ----- |

## CONNECTICUT VALLEY BROADLEAF, TYPE 51

|        |      |      |      |      |      |        |      |      |      |       |       |
|--------|------|------|------|------|------|--------|------|------|------|-------|-------|
| 1919.. | 28.2 | 30.2 | 58.4 | 23.8 | 44.8 | 1927.. | 17.0 | 47.3 | 64.3 | 24.3  | 21.0  |
| 1920.. | 27.5 | 34.6 | 62.1 | 23.9 | 39.2 | 1928.. | 16.1 | 40.0 | 56.1 | 16.5  | 21.0  |
| 1921.. | 28.6 | 38.2 | 66.8 | 26.8 | 19.9 | 1929.. | 12.1 | 39.6 | 51.7 | 20.0  | 27.4  |
| 1922.. | 14.8 | 41.0 | 55.8 | 12.8 | 30.0 | 1930.. | 13.5 | 31.7 | 50.2 | 11.8  | 25.1  |
| 1923.. | 20.4 | 43.0 | 63.4 | 13.1 | 35.0 | 1931.. | 13.8 | 39.4 | 57.2 | 10.5  | 14.0  |
| 1924.. | 22.9 | 50.3 | 73.2 | 17.0 | 20.0 | 1932.. | 13.0 | 46.7 | 61.7 | 14.1  | 11.5  |
| 1925.. | 26.5 | 56.2 | 82.7 | 27.9 | 13.9 | 1933.. | 10.7 | 47.6 | 58.3 | 12.7  | 12.5  |
| 1926.. | 13.9 | 54.8 | 73.7 | 26.4 | 26.0 | 1934.. | 8.2  | 45.6 | 53.8 | ----- | ----- |

## CONNECTICUT VALLEY HAVANA SEED, TYPE 52 10

|        |      |      |      |      |      |        |      |      |      |       |       |
|--------|------|------|------|------|------|--------|------|------|------|-------|-------|
| 1919.. | 23.9 | 29.6 | 53.5 | 17.7 | 31.8 | 1927.. | 15.8 | 54.1 | 69.9 | 22.6  | 23.8  |
| 1920.. | 21.9 | 35.8 | 57.7 | 25.1 | 36.4 | 1928.. | 17.2 | 47.3 | 64.5 | 24.5  | 24.2  |
| 1921.. | 22.6 | 32.0 | 55.2 | 11.0 | 23.0 | 1929.. | 18.1 | 40.0 | 58.1 | 16.0  | 31.1  |
| 1922.. | 18.0 | 44.2 | 62.2 | 10.9 | 29.3 | 1930.. | 17.9 | 42.1 | 60.0 | 17.2  | 21.9  |
| 1923.. | 24.2 | 51.3 | 75.5 | 18.3 | 35.4 | 1931.. | 15.3 | 42.8 | 58.1 | 10.7  | 13.0  |
| 1924.. | 23.1 | 57.2 | 80.3 | 19.2 | 19.2 | 1932.. | 18.0 | 47.4 | 65.4 | 20.7  | 8.5   |
| 1925.. | 21.2 | 61.1 | 82.3 | 21.7 | 16.2 | 1933.. | 9.9  | 44.7 | 54.6 | 11.3  | 9.7   |
| 1926.. | 16.2 | 60.6 | 76.8 | 22.7 | 27.2 | 1934.. | 5.2  | 43.3 | 48.5 | ----- | ----- |

## NEW YORK AND PENNSYLVANIA HAVANA SEED, TYPE 53 7

|        |     |     |     |     |      |        |     |     |     |       |       |
|--------|-----|-----|-----|-----|------|--------|-----|-----|-----|-------|-------|
| 1919.. | 4.1 | 2.9 | 7.0 | 3.9 | 22.5 | 1927.. | 1.9 | 4.0 | 5.9 | 3.1   | 18.0  |
| 1920.. | 3.6 | 3.1 | 6.7 | 2.2 | 27.0 | 1928.. | 1.6 | 2.8 | 4.4 | 1.6   | 19.3  |
| 1921.. | 3.7 | 4.5 | 8.2 | 2.5 | 19.3 | 1929.. | 1.4 | 2.8 | 4.2 | 1.5   | 15.4  |
| 1922.. | 3.3 | 5.7 | 9.0 | 4.8 | 25.0 | 1930.. | 1.5 | 2.7 | 4.2 | .4    | 11.7  |
| 1923.. | 3.5 | 4.2 | 7.7 | 3.7 | 21.3 | 1931.. | 2.1 | 3.8 | 5.9 | 1.0   | 9.5   |
| 1924.. | 3.4 | 4.0 | 7.4 | 1.9 | 21.9 | 1932.. | 1.8 | 4.9 | 6.7 | 2.0   | 3.5   |
| 1925.. | 3.2 | 5.5 | 8.7 | 3.0 | 20.1 | 1933.. | .8  | 4.7 | 5.5 | 2.1   | 4.0   |
| 1926.. | 2.5 | 5.7 | 8.2 | 4.2 | 19.5 | 1934.. | .6  | 3.4 | 4.0 | ----- | ----- |

## WISCONSIN, TYPES 54 AND 55

|        |      |       |       |      |         |         |        |      |       |       |      |         |         |
|--------|------|-------|-------|------|---------|---------|--------|------|-------|-------|------|---------|---------|
| 1919.. | 56.9 | 91.7  | 148.6 | 36.0 | \$ 20.0 | \$ 26.0 | 1924.. | 36.4 | 147.4 | 183.8 | 52.7 | \$ 9.6  | \$ 14.1 |
| 1920.. | 58.7 | 112.6 | 171.3 | 46.9 | \$ 12.6 | \$ 17.2 | 1925.. | 44.9 | 131.1 | 176.0 | 62.6 | \$ 11.6 | \$ 13.8 |
| 1921.. | 59.9 | 124.4 | 183.3 | 24.0 | \$ 6.7  | \$ 12.3 | 1926.. | 33.8 | 123.4 | 167.2 | 45.7 | \$ 12.8 | \$ 15.4 |
| 1922.. | 49.3 | 159.3 | 202.6 | 46.3 | \$ 13.0 | \$ 14.4 | 1927.. | 33.9 | 111.5 | 145.4 | 47.5 | \$ 14.0 | \$ 18.9 |
| 1923.. | 47.0 | 186.3 | 203.3 | 55.9 | \$ 8.6  | \$ 12.1 | 1928.. | 49.3 | 97.9  | 147.2 | 32.1 | \$ 13.7 | \$ 15.9 |

See footnotes at end of table.

TABLE 159.—*Tobacco, unmanufactured: Production, stocks, supply, disappearance, and price in continental United States, 1919-34*<sup>1</sup>—Continued

## SOUTHERN WISCONSIN, TYPE 54

| Year   | Pro-<br>duction                 | Stocks<br>Oct. 1,<br>green<br>weight <sup>2</sup> | Total<br>supply           | Dis-<br>ap-<br>pear-<br>ance,<br>begin-<br>ning<br>Oct. 1 | Season aver-<br>age farm<br>price per<br>pound | Year   | Pro-<br>duction                 | Stocks<br>Oct. 1,<br>green<br>weight <sup>2</sup> | Total<br>supply           | Dis-<br>ap-<br>pear-<br>ance,<br>begin-<br>ning<br>Oct. 1 | Season aver-<br>age farm<br>price per<br>pound |
|--------|---------------------------------|---|---------------------------|---|--|--------|---------------------------------|---|---------------------------|---|--|
|        | <i>Mil-<br/>lion<br/>pounds</i> | <i>Million<br/>pounds</i>                         | <i>Million<br/>pounds</i> | <i>Mil-<br/>lion<br/>pounds</i>                           | <i>Cents</i>                                   |        | <i>Mil-<br/>lion<br/>pounds</i> | <i>Million<br/>pounds</i>                         | <i>Million<br/>pounds</i> | <i>Mil-<br/>lion<br/>pounds</i>                           | <i>Cents</i>                                   |
| 1929.. | 29.7                            | 68.8  | 98.5                      | 28.9  | 13.4   | 1932.. | 25.0                            | 98.6  | 123.6                     | 25.6  | 4.5  |
| 1930.. | 31.8                            | 69.6  | 101.4                     | 19.4  | 9.8  | 1933.. | 10.8                            | 98.0  | 108.8                     | 9.6   | 5.5  |
| 1931.. | 31.0                            | 82.0  | 113.0                     | 14.4  | 5.6  | 1934.. | 6.4                             | 99.2  | 105.6                     | -----   | -----  |

## NORTHERN WISCONSIN, TYPE 55

|        |      |      |      |      |      |        |      |      |      |       |       |
|--------|------|------|------|------|------|--------|------|------|------|-------|-------|
| 1929.. | 20.2 | 46.3 | 66.5 | 21.9 | 17.3 | 1932.. | 11.9 | 61.2 | 73.1 | 8.6   | 3.9   |
| 1930.. | 24.0 | 44.6 | 68.6 | 10.8 | 10.3 | 1933.. | 5.5  | 64.5 | 70.0 | 14.1  | 4.8   |
| 1931.. | 20.0 | 57.8 | 77.8 | 16.6 | 5.1  | 1934.. | 3.7  | 55.9 | 59.6 | ----- | ----- |

## CONNECTICUT VALLEY SHADE-GROWN, TYPE 61

|        |     |      |      |     |       |        |      |      |      |       |       |
|--------|-----|------|------|-----|-------|--------|------|------|------|-------|-------|
| 1919.. | 5.8 | 7.0  | 12.8 | 6.4 | 105.0 | 1927.. | 6.4  | 8.0  | 14.4 | 6.1   | 105.0 |
| 1920.. | 5.4 | 6.4  | 11.8 | 2.4 | 100.0 | 1928.. | 6.9  | 8.3  | 15.2 | 7.3   | 93.0  |
| 1921.. | 7.5 | 9.4  | 16.9 | 7.7 | 95.0  | 1929.. | 10.2 | 7.9  | 18.1 | 5.7   | 56.0  |
| 1922.. | 6.8 | 9.2  | 16.0 | 4.9 | 90.0  | 1930.. | 7.7  | 12.4 | 20.1 | 6.8   | 73.0  |
| 1923.. | 9.6 | 11.1 | 20.7 | 8.8 | 100.0 | 1931.. | 5.3  | 13.3 | 18.6 | 5.3   | 82.0  |
| 1924.. | 7.4 | 11.9 | 19.3 | 6.6 | 85.0  | 1932.. | 4.5  | 13.3 | 17.8 | 4.7   | 59.0  |
| 1925.. | 4.8 | 12.7 | 17.5 | 9.7 | 100.0 | 1933.. | 4.9  | 13.1 | 18.0 | 7.4   | 64.0  |
| 1926.. | 5.3 | 7.8  | 13.1 | 5.1 | 97.8  | 1934.. | 5.3  | 10.6 | 15.9 | ----- | ----- |

## GEORGIA AND FLORIDA SHADE-GROWN, TYPE 62

|        |     |     |      |     |      |        |     |     |     |       |       |
|--------|-----|-----|------|-----|------|--------|-----|-----|-----|-------|-------|
| 1929.. | 4.4 | 6.0 | 10.4 | 3.0 | 55.0 | 1932.. | 2.4 | 6.4 | 8.8 | 3.0   | 35.0  |
| 1930.. | 3.8 | 7.4 | 11.2 | 4.7 | 60.0 | 1933.. | 1.2 | 5.8 | 7.0 | 1.8   | 32.0  |
| 1931.. | 3.1 | 6.5 | 9.6  | 3.2 | 30.0 | 1934.. | 1.8 | 5.2 | 7.0 | ----- | ----- |

MISCELLANEOUS DOMESTIC, TYPE 70<sup>13</sup>

|        |     |      |      |     |      |        |     |     |     |       |       |
|--------|-----|------|------|-----|------|--------|-----|-----|-----|-------|-------|
| 1919.. | 5.8 | 7.8  | 13.6 | 2.9 | 20.8 | 1927.. | 1.0 | 1.2 | 2.2 | 1.0   | 19.2  |
| 1920.. | 4.1 | 10.7 | 14.8 | 4.1 | 18.2 | 1928.. | 1.2 | 1.2 | 2.4 | (14)  | 18.0  |
| 1921.. | 1.9 | 10.7 | 12.6 | 4.9 | 23.6 | 1929.. | 2.4 | 2.6 | 5.0 | 1.8   | 9.6   |
| 1922.. | 2.6 | 7.7  | 10.3 | 0.4 | 27.4 | 1930.. | .9  | 3.2 | 4.1 | 1.2   | 13.0  |
| 1923.. | 2.2 | 3.9  | 6.1  | 3.3 | 32.0 | 1931.. | 1.2 | 2.9 | 4.1 | 1.7   | 9.7   |
| 1924.. | 1.3 | 2.8  | 4.1  | 1.9 | 24.8 | 1932.. | .5  | 2.4 | 2.9 | .6    | 12.3  |
| 1925.. | .9  | 2.2  | 3.1  | 1.5 | 27.9 | 1933.. | .3  | 2.3 | 2.6 | (15)  | 11.0  |
| 1926.. | .7  | 1.6  | 2.3  | 1.1 | 16.6 | 1934.. | .2  | 2.6 | 2.8 | ----- | ----- |

<sup>1</sup> Production and price data, 1919-29, revised May 1932.<sup>2</sup> Stocks as of July 1 and disappearance beginning July 1.<sup>3</sup> Calculated by converting stemmed to unstemmed and storage weight to green, or farmers' sales weight, by allowing for normal losses of moisture and stem.<sup>4</sup> Type 22.<sup>5</sup> Type 23.<sup>6</sup> Stocks as of Jan. 1 of year following production, and disappearance beginning Jan. 1 of year following production.<sup>7</sup> Previous to 1929 tobacco stocks reports included Pennsylvania and New York. Pennsylvania is believed to refer entirely to type 41. New York is believed to include type 53 produced both in New York and Pennsylvania.<sup>8</sup> Type 45.<sup>9</sup> Type 62.<sup>10</sup> Includes primed Havana seed, which has not been reported separately since 1929.<sup>11</sup> Type 54.<sup>12</sup> Type 55.<sup>13</sup> Includes Eastern Ohio and Perique. For years 1920-24 Round Tip also included. The stocks for earlier years probably include some other tobacco not reported separately as to type.<sup>14</sup> Tobacco stock classification changed in 1929, increasing miscellaneous stocks, so that 1928 disappearance cannot be made comparable.<sup>15</sup> Less than 50,000 pounds.

Bureau of Agricultural Economics; stocks prior to 1929 compiled from reports of the Bureau of the Census.

TABLE 160.—*Tobacco: Stocks in hands of dealers and manufacturers, first of each quarter, 1930-34*<sup>1</sup>

| Type and year  | Jan. 1       | Apr. 1       | July 1       | Oct. 1       | Type and year   | Jan. 1       | Apr. 1       | July 1       | Oct. 1       |
|--|--------------|--------------|--------------|--------------|---|--------------|--------------|--------------|--------------|
| Flue-cured, types 11, 12, 13, and 14:                          | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 pounds | Ohio cigar leaf (Miami Valley), types 42, 43, and 44: | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 pounds |
| 1930.....  | 795,484      | 707,149      | 599,262      | 687,769      | 1930.....   | 34,502       | 41,448       | 42,282       | 36,427       |
| 1931.....  | 898,983      | 831,347      | 676,752      | 739,356      | 1931.....   | 30,502       | 54,389       | 53,455       | 54,186       |
| 1932.....  | 893,088      | 845,642      | 795,207      | 720,508      | 1932.....   | 48,572       | 55,605       | 61,424       | 57,762       |
| 1933.....  | 769,497      | 680,280      | 578,157      | 605,710      | 1933.....   | 56,339       | 57,463       | 57,326       | 54,623       |
| 1934.....  | 858,124      | 785,207      | 652,064      | 758,709      | 1934.....   | 54,291       | 55,477       | 56,727       | 55,324       |
| Virginia fire-cured, type 21:                                  |              |              |              |              | Georgia and Florida sun-grown, type 45:               |              |              |              |              |
| 1930.....  | 34,997       | 40,021       | 35,625       | 27,917       | 1930.....   | 1,538        | 1,319        | 1,340        | 2,345        |
| 1931.....  | 33,392       | 38,364       | 33,241       | 28,607       | 1931.....   | 2,033        | 2,223        | 1,530        | 2,419        |
| 1932.....  | 30,352       | 40,711       | 36,243       | 32,216       | 1932.....   | 2,097        | 2,188        | 2,277        | 2,025        |
| 1933.....  | 31,369       | 35,820       | 31,514       | 26,906       | 1933.....   | 2,063        | 1,938        | 1,899        | 1,722        |
| 1934.....  | 23,109       | 37,643       | 32,230       | 27,655       | 1934.....   | 1,503        | 1,352        | 1,135        | 1,620        |
| Kentucky and Tennessee fire-cured, type 22 (eastern district): |              |              |              |              | Puerto Rico cigar leaf, type 46:                      |              |              |              |              |
| 1930.....  | 79,385       | 125,173      | 121,954      | 87,589       | 1930.....   | 29,039       | 28,442       | 24,734       | 23,510       |
| 1931.....  | 79,263       | 122,148      | 121,372      | 102,121      | 1931.....   | 27,294       | 27,932       | 24,940       | 23,546       |
| 1932.....  | 83,561       | 115,379      | 128,965      | 119,430      | 1932.....   | 26,415       | 25,647       | 23,470       | 20,336       |
| 1933.....  | 113,210      | 143,790      | 148,311      | 138,565      | 1933.....   | 19,668       | 19,618       | 18,732       | 17,881       |
| 1934.....  | 105,487      | 136,387      | 136,532      | 125,116      | 1934.....   | 20,437       | 21,162       | 19,490       | 18,499       |
| Kentucky and Tennessee fire-cured, type 23 (western district): |              |              |              |              | Conn. Valley Broad-leaf, type 51:                     |              |              |              |              |
| 1930.....  | 27,475       | 33,450       | 24,901       | 19,467       | 1930.....   | 29,507       | 30,072       | 28,960       | 24,809       |
| 1931.....  | 21,288       | 32,566       | 34,174       | 27,228       | 1931.....   | 23,438       | 30,753       | 33,377       | 29,969       |
| 1932.....  | 28,295       | 40,100       | 48,014       | 39,046       | 1932.....   | 29,501       | 36,505       | 36,783       | 36,647       |
| 1933.....  | 39,734       | 54,444       | 48,057       | 26,962       | 1933.....   | 35,093       | 35,667       | 38,961       | 37,450       |
| 1934.....  | 39,797       | 47,748       | 43,816       | 30,896       | 1934.....   | 35,238       | 37,384       | 39,126       | 35,740       |
| Henderson fire-cured (stemming), type 24:                      |              |              |              |              | Conn. Valley Havana seed, type 52:                    |              |              |              |              |
| 1930.....  | 2,794        | 5,089        | 2,291        | 736          | 1930.....   | 33,487       | 43,468       | 35,732       | 32,898       |
| 1931.....  | 3,788        | 8,519        | 4,212        | 3,102        | 1931.....   | 32,739       | 42,176       | 38,265       | 33,442       |
| 1932.....  | 3,183        | 5,294        | 5,186        | 4,147        | 1932.....   | 33,849       | 41,733       | 40,854       | 37,092       |
| 1933.....  | 3,109        | 8,385        | 5,605        | 4,006        | 1933.....   | 35,818       | 38,643       | 38,329       | 35,048       |
| 1934.....  | 3,591        | 4,811        | 4,096        | 4,164        | 1934.....   | 34,496       | 35,651       | 36,284       | 34,011       |
| Burley, type 31:   |              |              |              |              | New York Havana seed, type 53:                        |              |              |              |              |
| 1930.....  | 352,803      | 506,378      | 438,639      | 373,032      | 1930.....   | 2,395        | 2,811        | 2,533        | 2,166        |
| 1931.....  | 407,557      | 568,010      | 500,042      | 438,892      | 1931.....   | 2,837        | 3,558        | 3,644        | 3,034        |
| 1932.....  | 490,614      | 702,834      | 651,166      | 586,550      | 1932.....   | 2,864        | 4,455        | 4,370        | 3,881        |
| 1933.....  | 619,690      | 744,164      | 677,599      | 615,930      | 1933.....   | 3,335        | 3,265        | 3,932        | 3,761        |
| 1934.....  | 585,252      | 829,593      | 764,143      | 700,173      | 1934.....   | 4,136        | 3,932        | 3,102        | 2,704        |
| Southern Maryland, type 32:                                    |              |              |              |              | Wisconsin cigar leaf, types 54 and 55:                |              |              |              |              |
| 1930.....  | 15,304       | 11,960       | 9,553        | 17,167       | 1930.....   | 72,614       | 101,490      | 97,023       | 85,274       |
| 1931.....  | 17,038       | 14,615       | 11,756       | 22,109       | 1931.....   | 73,261       | 97,515       | 112,553      | 105,169      |
| 1932.....  | 20,998       | 19,559       | 21,677       | 30,670       | 1932.....   | 95,964       | 114,686      | 128,423      | 121,273      |
| 1933.....  | 31,325       | 28,247       | 28,444       | 40,488       | 1933.....   | 115,587      | 117,557      | 127,225      | 134,192      |
| 1934.....  | 37,989       | 31,921       | 29,597       | 35,577       | 1934.....   | 120,319      | 119,506      | 121,738      | 118,649      |
| One-socker, type 35:   |              |              |              |              | Conn. Valley shade grown, type 61:                    |              |              |              |              |
| 1930.....  | 29,852       | 28,218       | 30,283       | 25,123       | 1930.....   | 11,329       | 10,499       | 10,207       | 10,162       |
| 1931.....  | 26,180       | 45,357       | 41,026       | 32,324       | 1931.....   | 11,771       | 10,818       | 10,255       | 10,863       |
| 1932.....  | 31,680       | 45,106       | 37,493       | 33,715       | 1932.....   | 10,908       | 11,504       | 10,730       | 10,902       |
| 1933.....  | 34,054       | 40,941       | 36,677       | 30,461       | 1933.....   | 11,300       | 10,865       | 10,452       | 10,730       |
| 1934.....  | 27,384       | 41,178       | 35,700       | 31,893       | 1934.....   | 10,821       | 10,238       | 9,576        | 8,685        |
| Green River, type 36:  |              |              |              |              | Georgia and Florida shade, type 62:                   |              |              |              |              |
| 1930.....  | 30,824       | 35,618       | 28,533       | 23,786       | 1930.....   | 5,048        | 4,950        | 3,968        | 5,921        |
| 1931.....  | 27,369       | 29,308       | 26,136       | 24,242       | 1931.....   | 5,165        | 4,428        | 4,110        | 5,197        |
| 1932.....  | 26,953       | 38,957       | 36,952       | 36,905       | 1932.....   | 4,825        | 4,407        | 3,618        | 5,162        |
| 1933.....  | 33,791       | 44,006       | 41,508       | 36,574       | 1933.....   | 4,799        | 4,218        | 3,923        | 4,634        |
| 1934.....  | 35,101       | 37,684       | 35,725       | 31,655       | 1934.....   | 3,958        | 3,439        | 3,039        | 4,150        |
| Virginia sun-cured, type 37:                                   |              |              |              |              | Miscellaneous domestic type 70:                       |              |              |              |              |
| 1930.....  | 4,941        | 5,820        | 4,935        | 3,878        | 1930.....   | 1,989        | 4,105        | 2,932        | 2,918        |
| 1931.....  | 3,855        | 4,709        | 4,142        | 3,455        | 1931.....   | 2,728        | 2,973        | 2,843        | 2,573        |
| 1932.....  | 3,174        | 4,633        | 4,207        | 3,358        | 1932.....   | 2,864        | 2,927        | 2,551        | 2,182        |
| 1933.....  | 3,397        | 3,006        | 3,228        | 3,241        | 1933.....   | 2,262        | 2,085        | 2,043        | 2,065        |
| 1934.....  | 2,284        | 4,467        | 2,496        | 2,026        | 1934.....   | 2,184        | 2,339        | 1,996        | 2,259        |
| Pennsylvania seed-leaf, type 41:                               |              |              |              |              |   |              |              |              |              |
| 1930.....  | 73,188       | 93,795       | 90,292       | 79,592       |   |              |              |              |              |
| 1931.....  | 68,790       | 80,387       | 83,011       | 74,200       |   |              |              |              |              |
| 1932.....  | 66,310       | 115,064      | 114,702      | 107,633      |   |              |              |              |              |
| 1933.....  | 98,777       | 98,950       | 99,048       | 93,312       |   |              |              |              |              |
| 1934.....  | 91,672       | 96,162       | 97,084       | 91,685       |   |              |              |              |              |

<sup>1</sup> Storage order basis, including some tobacco which has been stemmed.



TABLE 161.—*Tobacco:*<sup>1</sup> *Exports from the United States to principal importing countries, 1925-34*

FLUE-CURED, TYPES 11, 12, 13, AND 14

| Importing countries  | Calendar year    |                  |                  |                  |                  |                  |                  |                 |                  |                  |
|----------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-----------------|------------------|------------------|
|                      | 1925             | 1926             | 1927             | 1928             | 1929             | 1930             | 1931             | 1932            | 1933             | 1934             |
| United Kingdom.....  | 1,000<br>131,034 | 1,000<br>125,964 | 1,000<br>166,655 | 1,000<br>162,329 | 1,000<br>199,632 | 1,000<br>180,380 | 1,000<br>145,309 | 1,000<br>11,899 | 1,000<br>165,717 | 1,000<br>175,372 |
| China.....           | 78,824           | 82,669           | 45,386           | 159,664          | 99,455           | 108,913          | 148,634          | 68,565          | 69,340           | 53,458           |
| Australia.....       | 19,638           | 20,843           | 17,247           | 20,050           | 18,438           | 26,248           | 14,924           | 11,938          | 5,813            | 13,902           |
| Canada.....          | 9,445            | 13,517           | 13,037           | 13,440           | 13,263           | 12,964           | 11,366           | 8,832           | 8,376            | 7,830            |
| Germany.....         | 5,988            | 12,385           | 12,809           | 16,327           | 6,558            | 10,946           | 7,864            | 7,935           | 4,554            | 4,702            |
| Other countries..... | 33,350           | 31,937           | 47,291           | 63,088           | 73,447           | 68,244           | 60,155           | 146,142         | 44,140           | 50,720           |
| Total.....           | 278,279          | 287,335          | 302,425          | 434,898          | 410,836          | 397,695          | 388,252          | 255,311         | 297,940          | 305,984          |

VIRGINIA FIRE-CURED, TYPE 21

|                      |        |        |        |        |        |        |        |        |        |        |
|----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| United Kingdom.....  | 4,889  | 3,626  | 1,357  | 1,234  | 1,923  | 2,324  | 1,413  | 1,824  | 554    | 1,308  |
| Germany.....         | 3,621  | 3,571  | 5,493  | 2,966  | 2,085  | 2,588  | 1,879  | 1,943  | 1,450  | 1,702  |
| Netherlands.....     | 2,971  | 2,810  | 2,807  | 1,164  | 859    | 1,025  | 1,255  | 2,147  | 1,067  | 1,295  |
| Australia.....       | 2,912  | 2,480  | 2,336  | 780    | 775    | 2,015  | 689    | 522    | 326    | 359    |
| China.....           | 399    | 70     | 1,774  | 111    | 179    | 107    | -----  | -----  | -----  | 10     |
| Norway.....          | 1,506  | 1,880  | 2,020  | 2,637  | 1,648  | 1,881  | 1,265  | 1,442  | 1,742  | 1,457  |
| Belgium.....         | 101    | 528    | 1,295  | 1,693  | 2,085  | 317    | 668    | 1,844  | 1,550  | 1,223  |
| Canada.....          | 363    | 20     | 263    | 356    | 152    | 177    | 92     | 54     | 60     | 88     |
| France.....          | 232    | 514    | 1,631  | 1,240  | 1,699  | 650    | 150    | -----  | -----  | 16     |
| Other countries..... | 3,349  | 2,891  | 5,281  | 6,494  | 12,767 | 4,295  | 4,018  | 4,594  | 5,187  | 3,998  |
| Total.....           | 20,343 | 18,390 | 24,277 | 18,695 | 24,122 | 15,379 | 11,430 | 14,370 | 11,936 | 11,431 |

KENTUCKY AND TENNESSEE FIRE-CURED, TYPES 22, 23, AND 24

|                      |         |         |         |        |        |         |        |        |        |        |
|----------------------|---------|---------|---------|--------|--------|---------|--------|--------|--------|--------|
| United Kingdom.....  | 22,023  | 15,734  | 9,149   | 6,547  | 7,271  | 6,288   | 5,579  | 4,749  | 4,725  | 2,111  |
| Spain.....           | 15,025  | 1,479   | 19,423  | 13,292 | 1,966  | 1,047   | 2,463  | 9,493  | 15,854 | 13,626 |
| France.....          | 12,253  | 32,823  | 20,769  | 13,465 | 15,582 | 37,516  | 18,494 | 31,274 | 21,365 | 20,275 |
| Germany.....         | 11,471  | 10,453  | 10,027  | 9,280  | 10,916 | 8,810   | 8,091  | 7,289  | 6,272  | 5,113  |
| Italy.....           | 10,212  | 4,066   | 385     | 650    | 2,587  | 3,165   | 3,228  | 694    | 649    | 885    |
| Netherlands.....     | 9,071   | 13,611  | 8,039   | 8,962  | 11,167 | 13,345  | 7,507  | 2,948  | 3,438  | 1,894  |
| Belgium.....         | 6,639   | 14,411  | 13,856  | 6,079  | 5,286  | 6,795   | 8,025  | 9,510  | 8,537  | 9,909  |
| Other countries..... | 30,280  | 27,270  | 30,260  | 25,739 | 25,002 | 28,474  | 14,884 | 13,436 | 15,734 | 11,608 |
| Total.....           | 116,974 | 119,847 | 112,008 | 84,014 | 79,777 | 105,440 | 67,971 | 79,393 | 76,574 | 65,421 |

BURLEY, TYPE 31

|                      |       |       |        |       |       |       |       |        |        |        |
|----------------------|-------|-------|--------|-------|-------|-------|-------|--------|--------|--------|
| Belgium.....         | 2,295 | 3,450 | 5,697  | 1,924 | 1,433 | 3,867 | 3,073 | 5,034  | 3,708  | 6,678  |
| France.....          | 0     | 413   | 229    | 149   | 8     | 16    | 471   | 326    | 243    | 186    |
| Portugal.....        | 1,248 | 1,064 | 2,362  | 1,238 | 1,433 | 2,746 | 1,635 | 1,813  | 1,432  | 2,849  |
| Netherlands.....     | 200   | 136   | 3,332  | 60    | 151   | 156   | 382   | 1,171  | 1,368  | 1,938  |
| Germany.....         | 33    | 197   | 1,618  | 185   | 103   | 209   | 387   | 763    | 388    | 481    |
| Other countries..... | 2,241 | 1,439 | 4,606  | 2,988 | 2,158 | 2,630 | 2,971 | 3,235  | 3,422  | 4,252  |
| Total.....           | 6,017 | 6,729 | 17,844 | 6,544 | 5,336 | 9,624 | 8,919 | 12,342 | 10,611 | 16,384 |

MARYLAND, TYPE 32, AND OHIO EXPORT

|                      |        |        |        |        |        |       |       |        |       |       |
|----------------------|--------|--------|--------|--------|--------|-------|-------|--------|-------|-------|
| France.....          | 6,404  | 5,514  | 8,957  | 3,547  | 6,016  | 3,253 | 3,788 | 3,750  | 2,066 | 162   |
| Netherlands.....     | 2,947  | 4,595  | 5,317  | 3,328  | 1,435  | 1,080 | 546   | 2,441  | 2,763 | 3,267 |
| Belgium.....         | 1,693  | 528    | 385    | 694    | 642    | 1,039 | 597   | 1,120  | 1,270 | 894   |
| Germany.....         | 297    | 674    | 942    | 426    | 492    | 185   | 115   | 226    | 608   | 280   |
| Switzerland.....     | 581    | 946    | 1,369  | 1,437  | 1,788  | 1,700 | 1,903 | 1,445  | 1,899 | 1,634 |
| Other countries..... | 1,991  | 1,335  | 2,566  | 1,465  | 1,204  | 2,464 | 600   | 1,187  | 580   | 816   |
| Total.....           | 13,913 | 13,592 | 20,036 | 10,947 | 11,577 | 9,721 | 7,549 | 10,169 | 9,186 | 7,103 |

ONE SUCKER, TYPE 35

|                          |       |       |       |       |       |       |       |     |       |       |
|--------------------------|-------|-------|-------|-------|-------|-------|-------|-----|-------|-------|
| Belgium.....             | ----- | ----- | 1,588 | 921   | 208   | 790   | 981   | 299 | 640   | 596   |
| British West Africa..... | ----- | ----- | 2,087 | 1,694 | 2,370 | 1,154 | 89    | 367 | 188   | 112   |
| Other countries.....     | ----- | ----- | 2,695 | 612   | 635   | 845   | 407   | 331 | 288   | 354   |
| Total.....               | ----- | ----- | 6,370 | 3,227 | 3,213 | 2,789 | 1,477 | 997 | 1,116 | 1,062 |

<sup>1</sup> On a dry-weight basis, including some tobacco which has been stemmed.

TABLE 161.—*Tobacco:*<sup>1</sup> *Exports from the United States to principal importing countries, 1925-34—Continued*

## GREEN RIVER, TYPE 36

| Importing countries      | Calendar year |        |        |       |        |       |       |       |       |       |
|--------------------------|---------------|--------|--------|-------|--------|-------|-------|-------|-------|-------|
|                          | 1925          | 1926   | 1927   | 1928  | 1929   | 1930  | 1931  | 1932  | 1933  | 1934  |
| United Kingdom.....      | 9,018         | 3,638  | 4,615  | 2,401 | 5,434  | 4,117 | 4,205 | 2,727 | 1,404 | 879   |
| British West Africa..... | 2,798         | 3,122  | 1,347  | 817   | 1,044  | 810   | 89    | 368   | 300   | 166   |
| China.....               | 2,286         | 2,663  | 1,025  | 214   | 540    | 455   |       |       |       |       |
| Belgium.....             | 700           | 1,491  | 900    | 698   | 594    | 1,177 | 475   | 579   | 409   | 760   |
| Other countries.....     | 3,169         | 3,102  | 4,942  | 4,238 | 2,750  | 1,890 | 578   | 715   | 369   | 439   |
| Total.....               | 17,971        | 14,076 | 12,829 | 8,368 | 10,362 | 7,919 | 5,347 | 4,389 | 2,542 | 2,244 |

## BLACK FAT AND DARK AFRICAN, CONSISTING PRINCIPALLY OF ONE-SUCKER

|                          |  |  |     |       |       |       |       |       |       |       |
|--------------------------|--|--|-----|-------|-------|-------|-------|-------|-------|-------|
| British Guiana.....      |  |  | 65  | 132   | 74    | 240   | 194   | 222   | 231   | 127   |
| British West Africa..... |  |  | 252 | 603   | 2,179 | 4,390 | 4,634 | 5,552 | 4,352 | 3,943 |
| French Africa.....       |  |  | 107 | 356   | 2,331 | 2,059 | 2,480 | 2,685 | 2,064 | 1,896 |
| Other countries.....     |  |  | 195 | 404   | 1,071 | 1,385 | 1,365 | 1,518 | 1,981 | 1,836 |
| Total.....               |  |  | 619 | 1,500 | 5,655 | 8,074 | 8,673 | 9,977 | 8,578 | 7,802 |

## CIGAR-LEAF TYPES

|                         |     |     |     |     |       |       |       |     |       |       |
|-------------------------|-----|-----|-----|-----|-------|-------|-------|-----|-------|-------|
| Netherlands.....        | 55  | 101 | 68  | 14  | 86    | 94    | 169   | 48  | 765   | 110   |
| Canada.....             | 331 | 142 | 203 | 310 | 333   | 292   | 239   | 130 | 54    | 190   |
| Philippine Islands..... | 309 | 263 | 217 | 242 | 321   | 188   | 230   | 297 | 432   | 490   |
| France.....             | 0   | 0   | 0   | 0   | 3,465 | 3,384 | 2,997 | 195 |       | 3     |
| Other countries.....    | 188 | 113 | 43  | 96  | 204   | 195   | 159   | 26  | 643   | 690   |
| Total.....              | 883 | 619 | 531 | 662 | 4,409 | 4,153 | 3,794 | 696 | 1,894 | 1,483 |

## TOTAL EXPORTS, ALL TYPES

|                      |         |         |         |         |         |         |                      |                      |         |         |
|----------------------|---------|---------|---------|---------|---------|---------|----------------------|----------------------|---------|---------|
| United Kingdom.....  | 171,115 | 149,720 | 182,542 | 173,671 | 214,598 | 193,816 | 157,506              | 121,901              | 174,765 | 180,287 |
| China.....           | 82,698  | 85,792  | 51,359  | 160,391 | 100,675 | 109,504 | 161,340              | 74,781               | 69,369  | 64,747  |
| Germany.....         | 21,687  | 27,854  | 31,387  | 30,164  | 20,461  | 23,044  | 20,443               | 29,175               | 13,803  | 18,325  |
| Italy.....           | 11,263  | 5,814   | 3,262   | 1,817   | 3,368   | 3,881   | 4,085                | 2,224                | 1,660   | 2,141   |
| France.....          | 21,723  | 49,573  | 38,082  | 21,447  | 35,840  | 56,517  | 29,655               | 36,602               | 24,695  | 21,935  |
| Belgium.....         | 14,255  | 21,592  | 26,293  | 15,679  | 13,752  | 16,609  | 17,414               | 22,869               | 19,518  | 24,954  |
| Netherlands.....     | 20,803  | 29,566  | 27,483  | 23,788  | 21,731  | 23,273  | 19,209               | 16,519               | 17,268  | 16,908  |
| Australia.....       | 22,577  | 23,356  | 19,812  | 21,167  | 19,915  | 28,739  | 15,756               | 12,837               | 6,710   | 14,606  |
| Spain.....           | 15,031  | 1,483   | 20,829  | 17,036  | 12,929  | 1,058   | 5,990                | 10,370               | 15,871  | 13,712  |
| Canada.....          | 11,956  | 15,508  | 15,394  | 16,097  | 14,511  | 14,146  | 12,425               | 9,429                | 8,771   | 8,392   |
| Other countries..... | 75,563  | 68,515  | 89,809  | 94,155  | 97,567  | 90,371  | 80,649               | 74,482               | 67,988  | 74,859  |
| Total.....           | 468,471 | 478,773 | 506,282 | 575,412 | 555,347 | 560,958 | 524,472 <sup>2</sup> | 411,159 <sup>2</sup> | 420,418 | 440,866 |

<sup>1</sup> On a dry-weight basis, including some tobacco which has been stemmed.

Bureau of Agricultural Economics; compiled from Foreign Commerce and Navigation of the United States and official records of the Bureau of Foreign and Domestic Commerce.

TABLE 162.—*Tobacco reexports from the United States, 1923-34*

| Calendar year | Leaf               |               | Manufactured    |                             |            | Calendar year | Leaf               |               | Manufactured    |                             |            |
|---------------|--------------------|---------------|-----------------|-----------------------------|------------|---------------|--------------------|---------------|-----------------|-----------------------------|------------|
|               | Cigar wrap-<br>per | Other         | Ciga-<br>rettes | Cigars and<br>che-<br>roots | Other      |               | Cigar wrap-<br>per | Other         | Ciga-<br>rettes | Cigars and<br>che-<br>roots | Other      |
|               | <i>Pounds</i>      | <i>Pounds</i> | <i>Lb.</i>      | <i>Lb.</i>                  | <i>Lb.</i> |               | <i>Pounds</i>      | <i>Pounds</i> | <i>Lb.</i>      | <i>Lb.</i>                  | <i>Lb.</i> |
| 1923.....     | 413,466            | 3,202,937     | 171             | 1,039                       | 223,688    | 1929.....     | 268,905            | 4,934,744     | 500             | 11,720                      | 34,468     |
| 1924.....     | 541,520            | 4,307,634     | 475             | 8,039                       | 50,992     | 1930.....     | 809,097            | 1,501,507     |                 | 3,895                       | 15,702     |
| 1925.....     | 671,667            | 1,483,795     | 478             | 1,433                       | 256,453    | 1931.....     | 228,460            | 343,306       | 2,964           | 571                         | 15,136     |
| 1926.....     | 460,567            | 698,515       | 1,120           | 511                         | 43,209     | 1932.....     | 436,673            | 311,942       | (1)             | (1)                         | 15,816     |
| 1927.....     | 330,826            | 1,160,033     | 7,808           | 86                          | 79,306     | 1933.....     | 233,909            | 636,847       | (1)             | (1)                         | 15,315     |
| 1928.....     | 213,314            | 2,178,539     | 3,050           | 55                          | 165,884    | 1934.....     | 201,184            | 438,357       | (1)             | (1)                         | 16,136     |

<sup>1</sup> Reported as total tobacco manufactured.<sup>2</sup> Includes stems, trimmings, and scraps as follows: Year 1931, 20,925,000 pounds; 1932, 23,393,000 pounds; and 1934, 21,883,000 pounds.

Bureau of Agricultural Economics; compiled from Foreign Commerce and Navigation of the United States and Monthly Summary of Foreign Commerce of the United States.

TABLE 163.—*Tobacco imported by the United States from foreign countries and shipments from possessions, 1925-34*

| Product and country from which imported | Calendar year       |                     |                     |                     |                     |                     |                     |                     |                     |                     |
|---|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|   | 1925                | 1926                | 1927                | 1928                | 1929                | 1930                | 1931                | 1932                | 1933                | 1934                |
|   | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> |
| Cigar wrapper:                          |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| Netherlands.....                        | 6,261               | 6,323               | 5,664               | 6,498               | 8,460               | 3,753               | 4,694               | 1,992               | 1,941               | 2,029               |
| Other countries.....                    | 174                 | 228                 | 120                 | 133                 | 103                 | 100                 | 51                  | 514                 | 130                 | 119                 |
| Total.....                              | 6,435               | 6,551               | 5,784               | 6,631               | 8,563               | 3,858               | 4,745               | 2,506               | 2,071               | 2,148               |
| Other cigar leaf:                       |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| Philippine Islands.....                 | 1,166               | 908                 | 1,611               | 3,727               | 3,963               | 4,680               | 4,144               | 3,560               | 1,627               | 1,485               |
| Cuba.....                               | 21,133              | 22,562              | 23,254              | 21,869              | 22,237              | 19,656              | 16,228              | 10,639              | 10,706              | 11,173              |
| Puerto Rico.....                        | 20,358              | 27,261              | 24,047              | 17,575              | 22,303              | 19,193              | 16,565              | 5,698               | 15,255              | 15,272              |
| Other countries.....                    | 163                 | 110                 | 283                 | 13                  | 20                  | 58                  | 8                   | 4                   | 8                   | ( <sup>1</sup> )    |
| Total.....                              | 42,820              | 50,841              | 49,200              | 43,184              | 48,523              | 43,587              | 36,945              | 19,901              | 27,596              | 27,930              |
| Cigarette leaf:                         |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| Bulgaria.....                           | 347                 | 499                 | 78                  | 46                  | -----               | -----               | 15                  | 7                   | -----               | 1                   |
| Germany.....                            | 892                 | 729                 | 896                 | 885                 | 412                 | 113                 | 49                  | 213                 | 2                   | 73                  |
| Greece.....                             | 22,958              | 13,704              | 29,909              | 13,152              | 17,340              | 15,562              | 19,668              | 15,058              | 13,329              | 16,289              |
| Italy.....                              | 10,812              | 10,764              | 17,570              | 10,280              | 8,894               | 9,811               | 11,967              | 11,164              | 7,178               | 6,934               |
| Turkey.....                             | 12,085              | 9,812               | 20,957              | 15,624              | 4,162               | 14,280              | 11,409              | 8,136               | 16,323              | 13,264              |
| Other countries.....                    | 431                 | 651                 | 410                 | 348                 | 196                 | 106                 | 864                 | 1,274               | 1,234               | 1,803               |
| Total.....                              | 47,025              | 36,159              | 69,820              | 40,335              | 31,004              | 39,872              | 43,502              | 35,852              | 38,066              | 38,364              |
| Scrap and other unmanufactured.....     | 6,749               | 6,231               | 8,813               | 10,413              | 10,433              | 9,173               | 11,160              | 9,048               | 8,649               | 8,680               |

<sup>1</sup> Less than 500 pounds.

Bureau of Agricultural Economics; compiled from Foreign Commerce and Navigation of the United States and Monthly Summary of Foreign Commerce of the United States.

TABLE 164.—*Tobacco products imported by the United States from foreign countries and shipments from possessions, calendar years 1925-34*

| Product and country from which imported | 1925             | 1926             | 1927             | 1928             | 1929             |
|---|------------------|------------------|------------------|------------------|------------------|
| Cigarettes:                             |                  |                  |                  |                  |                  |
| Philippine Islands.....pounds...        | 2,258            | 38,311           | 36,643           | 25,229           | 16,546           |
| Puerto Rico.....thousands...            | 2,850            | 4,825            | 5,227            | 5,368            | 4,730            |
| Other countries.....pounds...           | ( <sup>1</sup> ) | ( <sup>1</sup> ) | ( <sup>1</sup> ) | ( <sup>1</sup> ) | ( <sup>1</sup> ) |
| Cigars and cheroots:                    |                  |                  |                  |                  |                  |
| Philippine Islands.....do.....          | 3,225,868        | 3,021,298        | 2,645,177        | 2,574,138        | 2,073,116        |
| Puerto Rico.....thousands...            | 207,110          | 177,501          | 147,555          | 153,500          | 144,967          |
| Other countries.....pounds...           | 517,442          | 424,327          | 413,077          | 390,271          | 380,630          |
| All other manufactures.....do.....      | 255,398          | 374,679          | 402,747          | 274,249          | 211,463          |
| Product and country from which imported | 1930             | 1931             | 1932             | 1933             | 1934             |
| Cigarettes:                             |                  |                  |                  |                  |                  |
| Philippine Islands.....pounds...        | 6,246            | 9,523            | 2,627            | 19,238           | 5,699            |
| Puerto Rico.....thousands...            | 17,767           | 11,670           | 4,431            | 3,933            | 4,207            |
| Other countries.....pounds...           | ( <sup>1</sup> ) | ( <sup>1</sup> ) | ( <sup>1</sup> ) | ( <sup>1</sup> ) | 6                |
| Cigars and cheroots:                    |                  |                  |                  |                  |                  |
| Philippine Islands.....do.....          | 1,900,864        | 2,055,810        | 2,191,861        | 1,823,933        | 3,181,621        |
| Puerto Rico.....thousands...            | 157,877          | 162,208          | 76,266           | 63,715           | 63,375           |
| Other countries.....pounds...           | 280,195          | 216,934          | 41,654           | 31,071           | 42,614           |
| All other manufactures.....do.....      | 220,567          | 176,102          | 157,267          | 137,494          | 120,014          |

<sup>1</sup> Included in "All other manufactures."

Bureau of Agricultural Economics; compiled from Foreign Commerce and Navigation of the United States and Monthly Summary of Foreign Commerce of the United States.

TABLE 165.—*Tobacco used in manufacturing cigars, cigarettes, and other products, 1919-33*<sup>1</sup>

| Calendar year | Cigars        |               | Cigarettes    |               | Tobacco and snuff | Total         |
|---------------|---------------|---------------|---------------|---------------|-------------------|---------------|
|               | Large         | Small         | Large         | Small         |                   |               |
|               | <i>Pounds</i> | <i>Pounds</i> | <i>Pounds</i> | <i>Pounds</i> | <i>Pounds</i>     | <i>Pounds</i> |
| 1919.....     | 162,257,051   | 3,055,055     | 152,620       | 197,880,881   | 307,575,503       | 670,921,110   |
| 1920.....     | 183,042,903   | 2,552,099     | 141,318       | 176,739,478   | 306,360,063       | 668,835,861   |
| 1921.....     | 153,792,423   | 2,967,051     | 140,822       | 191,004,707   | 285,826,978       | 633,731,981   |
| 1922.....     | 149,363,275   | 2,345,976     | 142,044       | 169,455,096   | 325,509,608       | 646,815,999   |
| 1923.....     | 157,837,176   | 1,915,384     | 156,436       | 200,238,245   | 328,888,700       | 689,035,941   |
| 1924.....     | 151,856,058   | 2,056,784     | 137,929       | 217,562,885   | 322,745,284       | 693,838,440   |
| 1925.....     | 147,530,760   | 1,470,374     | 144,962       | 244,170,315   | 325,109,202       | 718,425,613   |
| 1926.....     | 151,049,170   | 1,322,339     | 108,497       | 267,475,086   | 317,399,077       | 737,354,169   |
| 1927.....     | 151,049,265   | 1,460,667     | 95,961        | 290,368,023   | 301,314,291       | 744,288,207   |
| 1928.....     | 149,993,168   | 1,296,722     | 87,632        | 310,070,927   | 293,176,363       | 754,624,812   |
| 1929.....     | 150,875,378   | 1,250,740     | 92,788        | 346,450,363   | 297,953,440       | 796,625,709   |
| 1930.....     | 136,749,816   | 1,151,057     | 65,353        | 347,849,455   | 293,990,441       | 779,806,202   |
| 1931.....     | 126,611,200   | 1,016,997     | 43,171        | 329,019,304   | 294,812,985       | 752,403,857   |
| 1932.....     | 103,235,757   | 1,054,270     | 18,347        | 299,010,925   | 286,816,510       | 680,133,806   |
| 1933.....     | 103,953,997   | 745,245       | 17,325        | 326,076,032   | 279,875,778       | 710,688,377   |

<sup>1</sup> The quantities given are unstemmed equivalent of all kinds of tobacco used. Stemmed leaf and scraps, etc., used in manufacturing have been converted to unstemmed equivalent at the ratio of 3 pounds stemmed to 4 pounds unstemmed; in respect to leaf used in the manufacture of tobacco and snuff, prior to 1928 no conversion factor was used but in this table all figures are compiled on the conversion basis named.

Bureau of Internal Revenue, Treasury Department.

TABLE 166.—*Tobacco products manufactured, 1919-33*

| Calendar year | Plug          | Twist         | Fine cut      | Scrap chewing <sup>1</sup> | Smoking <sup>1</sup> | Snuff         | Total         |
|---------------|---------------|---------------|---------------|----------------------------|----------------------|---------------|---------------|
|               | <i>Pounds</i> | <i>Pounds</i> | <i>Pounds</i> | <i>Pounds</i>              | <i>Pounds</i>        | <i>Pounds</i> | <i>Pounds</i> |
| 1919.....     | 141,037,895   | 11,290,488    | 8,165,855     | 223,566,655                | 35,007,882           | 424,068,785   | 412,629,506   |
| 1920.....     | 138,533,258   | 11,765,807    | 8,680,999     | 219,270,561                | 34,348,941           | 412,629,506   | 412,629,506   |
| 1921.....     | 113,384,374   | 9,261,035     | 6,892,655     | 222,728,045                | 34,689,917           | 386,951,026   | 419,506,105   |
| 1922.....     | 120,174,363   | 10,947,547    | 6,882,472     | 243,355,372                | 38,136,406           | 412,776,875   | 412,776,875   |
| 1923.....     | 120,798,439   | 10,665,185    | 7,140,828     | 234,944,139                | 39,228,284           | 414,178,378   | 414,178,378   |
| 1924.....     | 111,477,092   | 9,901,542     | 6,780,581     | 246,990,137                | 39,029,026           | 413,872,968   | 410,595,716   |
| 1925.....     | 111,390,766   | 9,749,836     | 7,151,246     | 247,739,899                | 37,841,222           | 413,872,968   | 410,595,716   |
| 1926.....     | 109,766,342   | 9,179,089     | 6,984,728     | 246,438,832                | 38,236,725           | 396,323,980   | 386,333,478   |
| 1927.....     | 103,918,416   | 7,988,281     | 6,286,483     | 237,933,677                | 40,197,123           | 381,199,890   | 371,237,299   |
| 1928.....     | 100,646,047   | 8,891,640     | 5,186,304     | 231,134,105                | 40,475,382           | 371,765,909   | 371,765,909   |
| 1929.....     | 96,744,046    | 8,187,008     | 5,555,620     | 229,685,163                | 41,127,453           | 371,237,299   | 371,237,299   |
| 1930.....     | 86,273,517    | 7,623,716     | 5,089,410     | 232,013,383                | 40,765,883           | 347,278,744   | 342,113,160   |
| 1931.....     | 78,652,810    | 6,377,436     | 4,170,255     | 61,235,195                 | 182,947,238          | 39,854,345    | 371,237,299   |
| 1932.....     | 61,945,173    | 4,918,034     | 3,354,471     | 50,080,201                 | 190,986,528          | 35,994,337    | 347,278,744   |
| 1933.....     | 61,361,495    | 5,041,990     | 3,120,427     | 44,724,472                 | 191,766,382          | 36,068,394    | 342,113,160   |

| Calendar year | Cigars <sup>2</sup>                   |   | Cigarettes                            |   |
|---------------|---------------------------------------|---|---------------------------------------|---|
|               | Weighing more than 3 pounds per 1,000 | Weighing not more than 3 pounds per 1,000 | Weighing more than 3 pounds per 1,000 | Weighing not more than 3 pounds per 1,000 |
|               | <i>Number</i>                         | <i>Number</i>                             | <i>Number</i>                         | <i>Number</i>                             |
| 1919.....     | 7,072,357,021                         | 713,235,870                               | 31,888,910                            | 53,119,784,232                            |
| 1920.....     | 8,066,753,663                         | 633,222,232                               | 28,038,552                            | 47,430,105,055                            |
| 1921.....     | 6,726,095,483                         | 870,452,748                               | 14,518,266                            | 52,085,011,560                            |
| 1922.....     | 6,722,354,177                         | 632,906,635                               | 17,450,456                            | 55,768,022,618                            |
| 1923.....     | 6,950,247,389                         | 505,305,490                               | 18,065,858                            | 66,715,830,430                            |
| 1924.....     | 6,597,876,535                         | 530,714,332                               | 16,054,285                            | 72,708,989,025                            |
| 1925.....     | 6,463,193,108                         | 447,089,170                               | 17,428,807                            | 82,247,100,347                            |
| 1926.....     | 6,498,641,233                         | 412,314,795                               | 13,239,765                            | 92,096,973,926                            |
| 1927.....     | 6,519,004,960                         | 439,419,390                               | 11,432,360                            | 98,909,031,619                            |
| 1928.....     | 6,373,181,751                         | 415,535,410                               | 10,403,004                            | 108,705,505,650                           |
| 1929.....     | 6,518,533,042                         | 419,880,335                               | 9,952,480                             | 122,392,380,846                           |
| 1930.....     | 5,893,890,418                         | 383,069,980                               | 7,366,925                             | 128,902,186,217                           |
| 1931.....     | 5,347,921,293                         | 338,996,780                               | 5,159,660                             | 117,062,604,894                           |
| 1932.....     | 4,382,722,918                         | 278,748,580                               | 3,373,577                             | 106,632,433,834                           |
| 1933.....     | 4,300,044,810                         | 209,514,620                               | 2,845,705                             | 114,874,217,470                           |

<sup>1</sup> Prior to 1931, scrap chewing was included with smoking tobacco.

<sup>2</sup> Cigars produced in and removed for domestic consumption from bonded manufacturing warehouses are not included.

Bureau of Internal Revenue, Treasury Department.

TABLE 167.—*Tobacco, unmanufactured: International trade, average 1925-29, annual 1931-33*

| Country                                  | Calendar year       |                     |                     |                     |                     |                     |                     |                     |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|  | Average 1925-29     |                     | 1931                |                     | 1932                |                     | 1933 <sup>1</sup>   |                     |
|  | Exports             | Imports             | Exports             | Imports             | Exports             | Imports             | Exports             | Imports             |
| <b>PRINCIPAL EXPORTING COUNTRIES</b>     | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> |
| United States.....                       | 525,232             | 78,243              | 524,472             | 74,452              | 411,159             | 56,905              | 438,936             | 57,253              |
| Netherlands Indies.....                  | 170,071             | 11,967              | 178,565             | 7,870               | 163,604             | 10,656              | 286,917             | 25,456              |
| Greece.....                              | 109,224             | 340                 | 94,897              | 77,827              | 77,827              | 0                   | 76,594              | 0                   |
| Turkey.....                              | 78,023              | 0                   | 48,969              | 0                   | 63,590              | 0                   | 67,939              | 0                   |
| Brazil.....                              | 67,864              | 3,869               | 83,264              | 2,251               | 59,189              | 1,529               | 44,299              | 0                   |
| Bulgaria.....                            | 57,618              | 0                   | 54,205              | 0                   | 45,176              | 0                   | 49,629              | 1                   |
| Philippine Islands.....                  | 47,940              | 674                 | 53,691              | 790                 | 50,521              | 1,870               | 37,250              | 0                   |
| Cuba.....                                | 42,279              | 0                   | 40,294              | 0                   | 36,869              | 0                   | 0                   | 0                   |
| British India.....                       | 40,432              | 16,192              | 36,423              | 11,002              | 31,426              | 15,910              | 36,568              | 12,027              |
| Dominican Republic.....                  | 36,528              | 0                   | 15,011              | 0                   | 9,779               | 0                   | 12,476              | 0                   |
| Algeria.....                             | 33,841              | 10,374              | 30,551              | 9,304               | 24,814              | 12,300              | 29,785              | 5,399               |
| Paraguay.....                            | 14,252              | 162                 | 20,794              | 0                   | 13,958              | 0                   | 0                   | 0                   |
| Hungary.....                             | 12,892              | 7,393               | 20,624              | 6,605               | 26,711              | 1,312               | 20,166              | 2,128               |
| Union of Soviet Socialist Republics..... | 9,873               | 0                   | 6,389               | 0                   | 6,991               | 0                   | 11,614              | 0                   |
| Yugoslavia.....                          | 4,994               | 766                 | 6,490               | 454                 | 12,821              | 369                 | 10,176              | 221                 |
| Ceylon.....                              | 2,243               | 70                  | 2,584               | 872                 | 1,022               | 0                   | 2,165               | 0                   |
| <b>Total.....</b>                        | <b>1,252,804</b>    | <b>129,750</b>      | <b>1,217,223</b>    | <b>113,600</b>      | <b>1,036,057</b>    | <b>100,851</b>      | <b>914,514</b>      | <b>82,485</b>       |
| <b>PRINCIPAL IMPORTING COUNTRIES</b>     |                     |                     |                     |                     |                     |                     |                     |                     |
| Germany.....                             | 679                 | 217,778             | 657                 | 158,258             | 548                 | 179,057             | 672                 | 185,662             |
| United Kingdom.....                      | 6,211               | 202,589             | 8,804               | 185,997             | 9,393               | 166,126             | 14,468              | 201,327             |
| China.....                               | 24,737              | 104,548             | 18,784              | 165,609             | 13,111              | 79,757              | 20,905              | 54,591              |
| France.....                              | 408                 | 92,321              | 1,129               | 111,876             | 2,091               | 106,583             | 1,202               | 85,850              |
| Netherlands.....                         | 3,115               | 70,090              | 4,388               | 74,524              | 4,228               | 71,925              | 3,934               | 76,678              |
| Spain.....                               | 37                  | 53,921              | 0                   | 65,419              | 0                   | 88,211              | 0                   | 58,742              |
| Belgium.....                             | 82                  | 45,005              | 685                 | 49,846              | 551                 | 49,034              | 203                 | 44,004              |
| Czechoslovakia.....                      | 7                   | 38,996              | 0                   | 22,800              | 0                   | 22,279              | 0                   | 30,080              |
| Poland.....                              | 723                 | 33,809              | 131                 | 22,432              | 92                  | 18,792              | 83                  | 15,832              |
| Austria.....                             | 2,111               | 31,367              | 2,349               | 29,174              | 1,753               | 24,004              | 2,764               | 24,506              |
| Argentina.....                           | 417                 | 23,945              | 599                 | 26,538              | 627                 | 13,758              | 576                 | 22,299              |
| Australia <sup>2</sup> .....             | 7                   | 21,622              | 0                   | 22,393              | 0                   | 15,119              | 0                   | 14,632              |
| Canada.....                              | 5,467               | 17,058              | 6,706               | 14,323              | 11,197              | 10,262              | 9,511               | 13,878              |
| Egypt.....                               | 0                   | 16,639              | 0                   | 13,677              | 0                   | 12,548              | 0                   | 12,019              |
| Italy.....                               | 7,833               | 16,165              | 9,301               | 6,004               | 7,916               | 8,833               | 8,328               | 6,347               |
| Switzerland.....                         | 92                  | 13,166              | 405                 | 16,692              | 304                 | 16,097              | 37                  | 18,560              |
| Japan.....                               | 2,952               | 12,832              | 1,766               | 16,080              | 1,415               | 8,321               | 3,135               | 8,927               |
| Sweden.....                              | 160                 | 12,099              | 182                 | 12,849              | 153                 | 9,730               | 219                 | 15,119              |
| Denmark.....                             | 2                   | 11,835              | 0                   | 13,481              | 21                  | 14,565              | 10                  | 16,516              |
| Irish Free State.....                    | 269                 | 8,934               | 314                 | 11,307              | 276                 | 6,727               | 0                   | 5,475               |
| Finland.....                             | 0                   | 7,094               | 0                   | 4,665               | 0                   | 5,079               | 0                   | 6,053               |
| Norway.....                              | 0                   | 5,037               | 0                   | 6,665               | 0                   | 5,040               | 0                   | 4,928               |
| <b>Total.....</b>                        | <b>54,810</b>       | <b>1,056,850</b>    | <b>56,170</b>       | <b>1,050,609</b>    | <b>53,676</b>       | <b>931,847</b>      | <b>66,047</b>       | <b>922,000</b>      |

<sup>1</sup> Preliminary.<sup>2</sup> Java and Madura only.<sup>3</sup> 3-year average.<sup>4</sup> Source: Turkish Legation.<sup>5</sup> 2-year average.<sup>6</sup> Year ended June 30.

Bureau of Agricultural Economics; official sources. Tobacco comprises leaf, stems and strappings, but not snuff.

## STATISTICS OF FRUITS AND VEGETABLES

TABLE 168.—*Almonds: Production and average price per ton received by producers, California, 1925-34*

| Item   | 1925  | 1926   | 1927   | 1928   | 1929  | 1930   | 1931   | 1932   | 1933   | 1934 <sup>1</sup> |
|--|-------|--------|--------|--------|-------|--------|--------|--------|--------|-------------------|
| Production short tons...                       | 7,500 | 16,000 | 12,000 | 14,000 | 4,700 | 13,500 | 14,800 | 14,000 | 12,900 | 10,900            |
| Price.....dollars...                           | 400   | 300    | 320    | 340    | 480   | 200    | 176    | 165    | 186    | 180               |
| Farm value, basis average price...1,000 dol... | 3,000 | 4,800  | 3,840  | 4,760  | 2,256 | 2,700  | 2,605  | 2,310  | 2,399  | 1,962             |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board. Data for earlier years in 1928 Yearbook, table 165.

TABLE 169.—*Apples: Production, car-lot shipments, prices, and foreign trade, United States, 1919-34*

| Year                    | Production       |                                   | Weighted average price per bushel received by producers | Car-lot shipments from crop of year shown |                            | Foreign trade, year beginning July 1 <sup>1</sup> |                 |                                     |                                      |  |                          |   |
|-------------------------|------------------|-----------------------------------|---|---|----------------------------|---|-----------------|-------------------------------------|--------------------------------------|--|--------------------------|---|
|                         | Total            | Com-<br>mer-<br>cial <sup>2</sup> |   | Cars                                      | Equiv-<br>alent<br>bushels | Domestic exports                                  |                 |                                     |                                      | Im-<br>ports,<br>fresh<br>and<br>dried<br>in<br>terms<br>of<br>fresh | Net exports <sup>4</sup> |   |
|                         |                  |                                   |   |   |                            | Fresh   | Dried           | Dried<br>in<br>terms<br>of<br>fresh | Canned<br>in<br>terms<br>of<br>fresh |  | Total                    | Per-<br>centage<br>of<br>pro-<br>duc-<br>tion |
|                         |                  |                                   |   |   |                            |   |                 |                                     |                                      |  |                          |   |
|                         | 1,000<br>bushels | 1,000<br>bushels                  | Dollars   | Num-<br>ber                               | 1,000<br>bushels           | 1,000<br>bushels                                  | 1,000<br>pounds | 1,000<br>bushels                    | 1,000<br>bushels                     | 1,000<br>bushels   | 1,000<br>bushels         | Per<br>cent                                   |
| 1919.....               | 136,561          |                                   |   |   |                            |   |                 |                                     |                                      |  |                          |   |
| 1919.....               | 140,786          | 81,521                            | 1.75  |   |                            | 3,152   | 11,819          | 1,231                               |                                      | 849  | 3,534                    | 2.5   |
| 1920.....               | 207,313          | 103,107                           | 1.22  | 116,117                                   | 67,282                     | 7,995   | 18,053          | 1,881                               |                                      | 142  | 9,734                    | 4.7   |
| 1921.....               | 95,478           | 66,274                            | 1.64  | 89,559                                    | 58,143                     | 3,282   | 12,431          | 1,295                               |                                      | 1,353  | 3,224                    | 3.4   |
| 1922.....               | 189,776          | 101,282                           | 1.02  | 113,961                                   | 68,299                     | 5,269   | 12,817          | 1,335                               |                                      | 189  | 6,415                    | 3.4   |
| 1923.....               | 180,968          | 109,917                           | 1.13  | 138,184                                   | 84,452                     | 12,295  | 30,410          | 3,168                               |                                      | 132  | 15,331                   | 8.5   |
| 1924.....               | 158,967          |                                   |   |   |                            |   |                 |                                     |                                      |  |                          |   |
| 1924.....               | 160,049          | 87,681                            | 1.21  | 103,843                                   | 62,566                     | 9,604   | 19,225          | 2,002                               | 562                                  | 106  | 12,062                   | 7.6   |
| 1925.....               | 151,752          | 100,123                           | 1.25  | 127,804                                   | 76,983                     | 11,015  | 24,833          | 2,587                               | 538                                  | 74   | 14,066                   | 9.2   |
| 1926.....               | 227,043          | 121,481                           | .90   | 133,550                                   | 80,704                     | 21,293  | 32,670          | 3,403                               | 675                                  | 84   | 25,287                   | 11.1  |
| 1927.....               | 115,625          | 78,327                            | 1.40  | 93,094                                    | 58,346                     | 9,430   | 21,704          | 2,261                               | 573                                  | 154  | 12,110                   | 10.4  |
| 1928.....               | 176,721          | 107,860                           | 1.08  | 127,530                                   | 80,184                     | 21,043  | 50,024          | 5,211                               | 1,151                                | 117  | 27,288                   | 15.4  |
| 1929.....               | 186,459          |                                   |   |   |                            |   |                 |                                     |                                      |  |                          |   |
| 1929.....               | 133,318          | 87,855                            | 1.39  | 102,801                                   | 63,974                     | 10,279  | 23,769          | 2,476                               | 836                                  | 309  | 13,282                   | 10.0  |
| 1930.....               | 153,372          | 102,088                           | 1.02  | 109,794                                   | 71,472                     | 20,341  | 38,121          | 3,971                               | 640                                  | 103  | 24,849                   | 16.2  |
| 1931.....               | 202,477          | 106,025                           | .65   | 101,731                                   | 63,079                     | 18,030  | 31,557          | 3,287                               | 695                                  | 82   | 21,930                   | 10.8  |
| 1932.....               | 140,775          | 85,575                            | .62   | 77,422                                    | 49,520                     | 13,754  | 36,601          | 3,813                               | 748                                  | 6  | 18,309                   | 13.0  |
| 1933.....               | 142,981          | 74,962                            | .78   | 62,344                                    | 40,218                     | 12,259  | 37,359          | 3,889                               | 459                                  | 13   | 16,574                   | 11.6  |
| 1934 <sup>3</sup> ..... | 119,855          | 75,160                            | .91   | 67,876                                    | 45,703                     |   |                 |                                     |                                      |  |                          |   |

<sup>1</sup> Included in "Total crop." By commercial crop is meant that portion of the total crop which is sold for consumption as fresh fruit.

<sup>2</sup> Compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1919-26; January and June issues, 1927-34; and official records of the Bureau of Foreign and Domestic Commerce.

<sup>3</sup> Dried and canned are converted to terms of fresh apples on following bases: 1 pound of dried is equivalent to about 5 pounds fresh; 1 pound of canned is equivalent to about 2 pounds fresh; 48 pounds fresh equal 1 bushel. No reexports reported.

<sup>4</sup> Total exports (domestic plus foreign) minus imports. Beginning 1933-34 domestic exports minus imports for consumption. (See introductory text.)

<sup>5</sup> Includes 6,724,000 bushels in 1928 and 220,000 bushels in 1932 not harvested on account of market conditions. Prices and value are computed on the harvested crop.

<sup>6</sup> Preliminary.

<sup>7</sup> December forecast of total shipments from 1934 crop.

Bureau of Agricultural Economics; production figures are estimates of the Crop Reporting Board, revised. See introductory text. Italic figures are census returns. Prices to producers are based upon returns from crop reporters.

TABLE 170.—*Apples: Production and weighted average price per bushel received by producers, by States, average 1927-31, and annual 1933 and 1934*

| State and division  | Production               |                          |                          |                          |                          |                          | Price for crop<br>of— |                   |
|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------------|-------------------|
|                     | Total                    |                          |                          | Commercial <sup>1</sup>  |                          |                          |                       |                   |
|                     | Average<br>1927-31       | 1933                     | 1934 <sup>2</sup>        | Average<br>1927-31       | 1933                     | 1934 <sup>2</sup>        | 1933                  | 1934 <sup>2</sup> |
|                     | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>Dollars</i>        | <i>Dollars</i>    |
| Maine.....          | 1,661                    | 1,884                    | 556                      | 1,129                    | 1,017                    | 368                      | 0.69                  | 1.28              |
| New Hampshire.....  | 877                      | 1,131                    | 312                      | 597                      | 849                      | 235                      | .73                   | 1.50              |
| Vermont.....        | 789                      | 1,027                    | 255                      | 507                      | 675                      | 190                      | .99                   | 1.67              |
| Massachusetts.....  | 2,535                    | 3,488                    | 1,435                    | 1,808                    | 2,490                    | 1,085                    | .76                   | 1.37              |
| Rhode Island.....   | 309                      | 350                      | 97                       | 205                      | 231                      | 76                       | .89                   | 1.55              |
| Connecticut.....    | 996                      | 1,184                    | 356                      | 659                      | 855                      | 276                      | .98                   | 1.58              |
| New York.....       | 16,836                   | 16,060                   | 11,844                   | 11,689                   | 9,600                    | 8,554                    | .93                   | 1.09              |
| New Jersey.....     | 3,191                    | 3,380                    | 2,070                    | 2,188                    | 2,145                    | 1,440                    | .94                   | 1.24              |
| Pennsylvania.....   | 8,909                    | 7,293                    | 8,554                    | 3,523                    | 2,154                    | 3,400                    | .92                   | .93               |
| North Atlantic..... | 36,101                   | 35,795                   | 25,479                   | 22,305                   | 20,016                   | 15,624                   | .90                   | 1.09              |
| Ohio.....           | 6,653                    | 4,380                    | 4,020                    | 1,975                    | 1,500                    | 1,400                    | .92                   | 1.05              |
| Indiana.....        | 1,895                    | 819                      | 1,032                    | 642                      | 234                      | 306                      | 1.02                  | 1.11              |
| Illinois.....       | 4,728                    | 2,200                    | 2,162                    | 3,175                    | 1,600                    | 1,610                    | .99                   | 1.21              |
| Michigan.....       | 6,261                    | 8,651                    | 6,464                    | 3,990                    | 5,184                    | 4,224                    | .70                   | .86               |
| Wisconsin.....      | 1,661                    | 1,938                    | 1,204                    | 390                      | 408                      | 258                      | .79                   | 1.04              |
| Minnesota.....      | 976                      | 1,060                    | 339                      | 114                      | 99                       | 38                       | .71                   | 1.30              |
| Iowa.....           | 1,483                    | 1,425                    | 962                      | 276                      | 255                      | 192                      | 1.03                  | 1.25              |
| Missouri.....       | 2,549                    | 3,132                    | 1,534                    | 1,317                    | 1,620                    | 780                      | .76                   | 1.12              |
| South Dakota.....   | 144                      | 68                       | 34                       | -----                    | -----                    | -----                    | 1.32                  | 1.50              |
| Nebraska.....       | 529                      | 370                      | 209                      | 215                      | 160                      | 100                      | 1.02                  | 1.33              |
| Kansas.....         | 1,305                    | 1,431                    | 783                      | 887                      | 939                      | 513                      | .88                   | 1.25              |
| North Central.....  | 28,183                   | 25,374                   | 18,743                   | 12,981                   | 11,999                   | 9,421                    | .82                   | 1.04              |
| Delaware.....       | 1,336                    | 932                      | 688                      | 1,099                    | 636                      | 493                      | .81                   | 1.00              |
| Maryland.....       | 2,056                    | 1,312                    | 1,102                    | 1,355                    | 657                      | 615                      | .75                   | .92               |
| Virginia.....       | 12,914                   | 10,900                   | 9,275                    | 8,040                    | 5,250                    | 6,562                    | .71                   | .79               |
| West Virginia.....  | 7,001                    | 4,200                    | 3,650                    | 3,918                    | 2,100                    | 2,475                    | .69                   | .97               |
| North Carolina..... | 3,886                    | 5,254                    | 3,525                    | 625                      | 1,011                    | 691                      | .65                   | .85               |
| South Carolina..... | 271                      | 279                      | 244                      | -----                    | -----                    | -----                    | 1.14                  | 1.11              |
| Georgia.....        | 1,005                    | 1,150                    | 874                      | 376                      | 354                      | 290                      | .84                   | 1.03              |
| South Atlantic..... | 27,969                   | 24,027                   | 19,338                   | 15,413                   | 10,008                   | 11,126                   | .71                   | .86               |
| Kentucky.....       | 2,235                    | 2,340                    | 934                      | 367                      | 288                      | 118                      | .87                   | .96               |
| Tennessee.....      | 1,941                    | 2,194                    | 1,748                    | 265                      | 228                      | 186                      | .82                   | .94               |
| Alabama.....        | 645                      | 648                      | 588                      | -----                    | -----                    | -----                    | .94                   | 1.40              |
| Mississippi.....    | 175                      | 174                      | 133                      | -----                    | -----                    | -----                    | 1.22                  | 1.27              |
| Arkansas.....       | 1,660                    | 1,925                    | 1,715                    | 887                      | 1,074                    | 956                      | .71                   | .85               |
| Louisiana.....      | 21                       | 22                       | 12                       | -----                    | -----                    | -----                    | 1.22                  | 1.16              |
| Oklahoma.....       | 358                      | 350                      | 348                      | 58                       | 60                       | 02                       | .76                   | .88               |
| Texas.....          | 145                      | 98                       | 134                      | -----                    | -----                    | -----                    | 1.10                  | 1.18              |
| South Central.....  | 7,179                    | 7,751                    | 5,612                    | 1,577                    | 1,650                    | 1,322                    | .83                   | .97               |
| Montana.....        | 485                      | 525                      | 358                      | 369                      | 264                      | 212                      | .76                   | .87               |
| Idaho.....          | 5,426                    | 5,244                    | 3,312                    | 4,487                    | 3,500                    | 2,976                    | .65                   | .87               |
| Wyoming.....        | 49                       | 50                       | 28                       | -----                    | -----                    | -----                    | .92                   | 1.52              |
| Colorado.....       | 2,103                    | 1,454                    | 1,354                    | 1,922                    | 1,300                    | 1,268                    | .58                   | .85               |
| New Mexico.....     | 810                      | 285                      | 1,240                    | 571                      | 168                      | 744                      | 1.22                  | .96               |
| Arizona.....        | 74                       | 51                       | 63                       | 28                       | 15                       | 24                       | 1.76                  | 1.71              |
| Utah.....           | 750                      | 313                      | 554                      | 531                      | 219                      | 403                      | .90                   | .96               |
| Nevada.....         | 47                       | 39                       | 36                       | -----                    | -----                    | -----                    | 1.20                  | 1.29              |
| Washington.....     | 32,306                   | 29,240                   | 32,300                   | 27,476                   | 20,000                   | 25,500                   | .75                   | .78               |
| Oregon.....         | 4,981                    | 3,500                    | 4,938                    | 3,365                    | 1,800                    | 3,100                    | .64                   | .69               |
| California.....     | 9,839                    | 9,333                    | 6,500                    | 5,420                    | 4,023                    | 3,440                    | .61                   | .80               |
| Western.....        | 56,871                   | 50,034                   | 50,683                   | 44,169                   | 31,289                   | 37,667                   | .71                   | .79               |
| United States.....  | 156,303                  | 142,981                  | 119,855                  | 96,445                   | 74,962                   | 75,160                   | .78                   | .91               |

<sup>1</sup> Included in "Total crop." By commercial crop is meant that portion of the total crop which is sold for consumption as fresh fruit.

<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

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TABLE 171.—Apples: *Weighted average auction price per box, New York, 1930-31 to 1934-35*

| Variety and season            | July        | Aug.        | Sept.       | Oct.        | Nov.        | Dec.        | Jan.        | Feb.        | Mar.        | Apr.        | May         | June        | July        | Average     |
|-------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Gravenstein:</b>           | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> |
| 1930-31.....                  | 2.17        | 2.09        | 1.81        | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | 2.06        |
| 1931-32.....                  | 2.27        | 2.16        | 1.35        | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | 2.08        |
| 1932-33.....                  | 1.60        | 1.21        | 1.57        | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | 1.37        |
| 1933-34.....                  | 1.92        | 1.58        | 1.31        | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | 1.37        |
| 1934-35.....                  | 2.11        | 2.03        | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | 1.52        |
| <b>Winter Banana:</b>         | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |
| 1930-31.....                  | -----       | 2.00        | 1.68        | 1.53        | 1.38        | 1.44        | 1.37        | 1.57        | -----       | 1.59        | -----       | -----       | -----       | 1.63        |
| 1931-32.....                  | -----       | 2.06        | 1.25        | 1.30        | 1.18        | 1.27        | 1.09        | 1.58        | -----       | .90         | 0.85        | -----       | -----       | 1.30        |
| 1932-33.....                  | -----       | 1.25        | 1.34        | 1.00        | -----       | .71         | -----       | 1.15        | -----       | -----       | -----       | -----       | -----       | 1.25        |
| 1933-34.....                  | -----       | -----       | 1.33        | 1.18        | 1.10        | -----       | 1.03        | -----       | -----       | -----       | -----       | -----       | -----       | 1.25        |
| 1934-35.....                  | -----       | 1.59        | 1.43        | 1.36        | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |
| <b>Delicious:<sup>1</sup></b> | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |
| 1930-31.....                  | -----       | -----       | 2.70        | 2.49        | 2.56        | 2.53        | 2.51        | 2.40        | 2.39        | 2.41        | 2.45        | 2.03        | 1.88        | 2.44        |
| 1931-32.....                  | -----       | -----       | 2.38        | 2.09        | 2.06        | 2.12        | 1.88        | 2.05        | 2.09        | 2.23        | 1.94        | 1.70        | -----       | 2.07        |
| 1932-33.....                  | -----       | -----       | 2.12        | 1.71        | 1.64        | 1.61        | 1.44        | 1.44        | 1.58        | 1.94        | 1.92        | 1.79        | .80         | 1.63        |
| 1933-34.....                  | -----       | -----       | 2.43        | 1.85        | 1.94        | 2.13        | 2.43        | 2.48        | 2.38        | 2.36        | 2.21        | 1.80        | 1.51        | 2.18        |
| 1934-35.....                  | -----       | -----       | 2.03        | 1.90        | 1.93        | 1.90        | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |
| <b>Jonathan:</b>              | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |
| 1930-31.....                  | -----       | -----       | 2.23        | 1.80        | 1.82        | 1.69        | 1.77        | -----       | -----       | -----       | -----       | -----       | -----       | 1.86        |
| 1931-32.....                  | -----       | -----       | 1.65        | 1.46        | 1.24        | 1.18        | 1.15        | 1.05        | .88         | 1.30        | -----       | -----       | -----       | 1.39        |
| 1932-33.....                  | -----       | -----       | 1.99        | 1.40        | 1.36        | 1.15        | 1.09        | -----       | .50         | .80         | .70         | -----       | -----       | 1.46        |
| 1933-34.....                  | -----       | -----       | 1.86        | 1.50        | 1.33        | 1.35        | 1.25        | 1.25        | -----       | -----       | -----       | -----       | -----       | 1.46        |
| 1934-35.....                  | -----       | 2.50        | 1.68        | 1.47        | 1.57        | 1.39        | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |
| <b>McIntosh:</b>              | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |
| 1930-31.....                  | -----       | -----       | 1.75        | 2.02        | 1.96        | 1.84        | 1.70        | 1.78        | 2.01        | 2.33        | 2.60        | -----       | -----       | 1.92        |
| 1931-32.....                  | -----       | -----       | 1.61        | 1.92        | 2.04        | 1.96        | 1.82        | 1.84        | 2.05        | 2.05        | 1.99        | 2.36        | -----       | 1.97        |
| 1932-33.....                  | -----       | -----       | 1.65        | 1.35        | 1.29        | 1.32        | 1.25        | 1.16        | 1.16        | 1.23        | 1.43        | 1.96        | -----       | 1.31        |
| 1933-34.....                  | -----       | -----       | 1.47        | 1.15        | -----       | -----       | 1.39        | 1.57        | 1.78        | 2.18        | -----       | -----       | -----       | 1.53        |
| 1934-35.....                  | -----       | 1.88        | 1.60        | 1.74        | 1.76        | 1.95        | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |
| <b>Rome Beauty:</b>           | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |
| 1930-31.....                  | -----       | -----       | 2.27        | 1.98        | 1.79        | 1.70        | 1.68        | 1.76        | 1.89        | 1.99        | 2.07        | 1.88        | 1.29        | 1.84        |
| 1931-32.....                  | -----       | -----       | 2.35        | 1.76        | 1.64        | 1.51        | 1.42        | 1.36        | 1.88        | 1.39        | 1.30        | 1.25        | .81         | 1.44        |
| 1932-33.....                  | -----       | -----       | 1.68        | 1.52        | 1.30        | 1.39        | 1.32        | 1.28        | 1.18        | 1.21        | 1.28        | 1.38        | -----       | 1.30        |
| 1933-34.....                  | -----       | -----       | 2.23        | 1.64        | 1.41        | 1.72        | 1.75        | 1.86        | 1.72        | 1.91        | 2.04        | 1.48        | 1.20        | 1.73        |
| 1934-35.....                  | -----       | -----       | 1.64        | 1.68        | 1.60        | 1.63        | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |
| <b>Esopus Spitzenberg:</b>    | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |
| 1930-31.....                  | -----       | -----       | -----       | 2.02        | 2.08        | 2.10        | 1.96        | 1.80        | 1.87        | 1.68        | -----       | -----       | -----       | 2.01        |
| 1931-32.....                  | -----       | -----       | -----       | 1.87        | 1.82        | 1.66        | 1.45        | 1.45        | 1.41        | 1.35        | .97         | -----       | -----       | 1.73        |
| 1932-33.....                  | -----       | -----       | -----       | 1.55        | 1.46        | 1.43        | 1.23        | 1.28        | 1.22        | 1.24        | 1.19        | -----       | -----       | 1.40        |
| 1933-34.....                  | -----       | -----       | -----       | 1.77        | 1.63        | 1.87        | 1.96        | 1.64        | 1.60        | 1.45        | -----       | -----       | -----       | 1.77        |
| 1934-35.....                  | -----       | -----       | -----       | 1.70        | 1.74        | 1.60        | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |
| <b>Yellow Newtown:</b>        | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |
| 1930-31.....                  | -----       | -----       | -----       | 2.04        | 2.79        | 1.84        | 1.95        | 1.87        | 1.99        | 2.11        | 2.32        | 2.49        | -----       | 2.24        |
| 1931-32.....                  | -----       | -----       | -----       | 1.84        | 1.96        | 1.80        | 1.38        | 1.62        | 1.70        | 1.88        | 2.06        | 2.08        | 1.24        | 1.94        |
| 1932-33.....                  | -----       | -----       | -----       | 1.62        | 1.41        | 1.32        | 1.25        | 1.27        | 1.31        | 1.48        | 1.70        | 2.19        | 2.48        | 1.76        |
| 1933-34.....                  | -----       | -----       | -----       | -----       | 2.20        | 1.81        | 1.63        | 1.83        | 2.06        | 2.21        | 2.09        | 1.96        | 1.49        | 1.99        |
| 1934-35.....                  | -----       | 1.50        | 1.52        | 1.66        | 1.61        | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |
| <b>Winesap:<sup>1</sup></b>   | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |
| 1930-31.....                  | -----       | -----       | -----       | -----       | 2.15        | 2.16        | 2.13        | 2.00        | 2.16        | 2.23        | 2.27        | 2.08        | 2.09        | 2.14        |
| 1931-32.....                  | -----       | -----       | -----       | 1.52        | 1.78        | 1.77        | 1.52        | 1.47        | 1.53        | 1.60        | 1.42        | 1.52        | 1.48        | 1.53        |
| 1932-33.....                  | -----       | -----       | -----       | -----       | 1.35        | 1.49        | 1.38        | 1.36        | 1.31        | 1.52        | 1.45        | 1.60        | 1.73        | 1.50        |
| 1933-34.....                  | -----       | -----       | -----       | -----       | 1.74        | 1.72        | 1.94        | 1.98        | 1.92        | 1.90        | 1.75        | 1.70        | 1.50        | 1.76        |
| 1934-35.....                  | -----       | -----       | -----       | 1.35        | 1.63        | 1.63        | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |
| <b>Summary:</b>               | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |
| 1930-31.....                  | 2.17        | 2.09        | 2.02        | 2.02        | 2.03        | 2.06        | 2.01        | 2.01        | 2.12        | 2.21        | 2.30        | 2.18        | 2.08        | 2.10        |
| 1931-32.....                  | 2.27        | 2.16        | 1.70        | 1.78        | 1.77        | 1.77        | 1.60        | 1.65        | 1.72        | 1.74        | 1.60        | 1.62        | 1.47        | 1.71        |
| 1932-33.....                  | 1.60        | 1.21        | 1.69        | 1.55        | 1.49        | 1.51        | 1.38        | 1.37        | 1.41        | 1.57        | 1.59        | 1.80        | 1.76        | 1.51        |
| 1933-34.....                  | 1.92        | 1.58        | 1.45        | 1.69        | 1.71        | 1.92        | 2.06        | 2.19        | 2.07        | 2.15        | 2.00        | 1.80        | 1.50        | 1.90        |
| 1934-35.....                  | 2.11        | 1.89        | 1.71        | 1.74        | 1.80        | 1.76        | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |

<sup>1</sup> Average for season includes a price in August for old-crop apples as follows: Delicious, 1932-34, \$0.67; Winesap, 1930-31, \$1.78; 1931-32, \$0.94; 1932-33, \$1.55; 1933-34, \$1.44.

Bureau of Agricultural Economics: compiled from New York Daily Fruit Reporter, deciduous section. Prices are weighted by number of boxes sold.



TABLE 172.—*Apples: Average price per bushel received by producers, United States, 1925-26 to 1934-35*

| Year         | June 15      | July 15      | Aug. 15      | Sept. 15     | Oct. 15      | Nov. 15      | Dec. 15      | Jan. 15      | Feb. 15      | Mar. 15      | Apr. 15      | May 15       | Weighted average |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------------------|
|              | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i>     |
| 1925-26..... | 201.4        | 158.7        | 130.7        | 112.5        | 120.5        | 127.7        | 137.4        | 146.3        | 146.3        | 139.8        | 143.2        | 148.2        | 125.1            |
| 1926-27..... | 168.7        | 133.8        | 103.8        | 88.4         | 80.2         | 81.6         | 87.7         | 97.3         | 98.8         | 100.0        | 103.8        | 113.5        | 89.5             |
| 1927-28..... | 140.0        | 144.4        | 135.8        | 130.7        | 134.7        | 141.8        | 152.4        | 161.7        | 168.3        | 177.0        | 183.3        | 190.6        | 139.8            |
| 1928-29..... | 188.7        | 156.0        | 105.5        | 96.6         | 99.4         | 107.9        | 118.5        | 124.1        | 129.9        | 134.1        | 133.5        | 147.9        | 108.1            |
| 1929-30..... | 153.1        | 160.5        | 138.9        | 131.0        | 137.9        | 135.6        | 143.4        | 148.3        | 154.0        | 155.2        | 150.9        | 168.2        | 138.6            |
| 1930-31..... | 173.6        | 144.8        | 106.3        | 103.2        | 98.4         | 96.7         | 98.8         | 103.8        | 106.0        | 105.5        | 117.1        | 121.9        | 102.2            |
| 1931-32..... | 131.5        | 107.9        | 77.4         | 70.7         | 58.9         | 61.3         | 64.7         | 66.4         | 66.4         | 71.2         | 79.2         | 82.7         | 65.2             |
| 1932-33..... | 92.1         | 86.2         | 65.1         | 57.4         | 57.2         | 57.1         | 61.7         | 65.1         | 66.3         | 70.3         | 78.6         | 84.9         | 61.6             |
| 1933-34..... | 88.7         | 86.9         | 74.7         | 72.8         | 70.3         | 73.1         | 80.0         | 89.4         | 96.7         | 103.6        | 109.0        | 113.7        | 78.2             |
| 1934-35..... | 121.8        | 100.5        | 82.1         | 82.2         | 84.4         | 89.3         | 94.0         | -----        | -----        | -----        | -----        | -----        | 91.3             |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics. Based upon returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 Yearbook, table 133. Only monthly prices are comparable.

TABLE 173.—*Apples: Car-lot shipments in eastern and western areas and United States by months, 1925-26 to 1934-35*

| State group and season     |                  | Crop-movement season <sup>1</sup> |             |             |             |             |             |             |             |             |             |             |             |             |             |  |
|----------------------------|------------------|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--|
|                            |                  | June                              | July        | Aug.        | Sept.       | Oct.        | Nov.        | Dec.        | Jan.        | Feb.        | Mar.        | Apr.        | May         | June        | Total       |  |
| Total eastern:             |                  | <i>Cars</i>                       | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> |  |
| 1925-26.....               | 379              | 2,436                             | 3,562       | 12,960      | 24,844      | 10,313      | 3,211       | 3,319       | 3,817       | 3,805       | 2,243       | 1,234       | 379         | 72,502      |             |  |
| 1926-27.....               | 165              | 2,271                             | 2,035       | 11,728      | 26,133      | 14,232      | 4,358       | 5,110       | 5,422       | 3,675       | 2,279       | 1,295       | 476         | 70,179      |             |  |
| 1927-28.....               | 243              | 1,507                             | 2,480       | 7,754       | 15,868      | 6,927       | 2,310       | 2,353       | 1,966       | 1,434       | 870         | 504         | 199         | 44,415      |             |  |
| 1928-29.....               | 196              | 1,867                             | 2,881       | 11,645      | 23,355      | 8,210       | 3,512       | 3,665       | 2,899       | 2,170       | 1,258       | 766         | 284         | 62,708      |             |  |
| 1929-30.....               | 512              | 1,697                             | 2,651       | 10,426      | 18,068      | 5,634       | 2,438       | 2,780       | 2,581       | 2,440       | 1,307       | 602         | 303         | 51,439      |             |  |
| 1930-31.....               | 388              | 1,915                             | 1,732       | 6,194       | 14,370      | 6,990       | 2,820       | 3,161       | 2,715       | 1,857       | 666         | 357         | 91          | 43,256      |             |  |
| 1931-32.....               | 339              | 1,714                             | 1,015       | 7,121       | 18,624      | 9,139       | 3,151       | 4,168       | 3,947       | 2,837       | 1,348       | 574         | 228         | 54,205      |             |  |
| 1932-33.....               | 231              | 1,101                             | 805         | 4,866       | 11,100      | 4,496       | 1,936       | 2,474       | 2,261       | 1,652       | 996         | 636         | 281         | 32,835      |             |  |
| 1933-34 <sup>2</sup> ..... | 247              | 1,008                             | 579         | 4,507       | 8,014       | 3,212       | 1,608       | 2,126       | 1,670       | 1,681       | 710         | 285         | 79          | 25,726      |             |  |
| 1934-35 <sup>2</sup> ..... | 99               | 495                               | 629         | 3,560       | 8,505       | 2,485       | 1,644       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |             |  |
| Total western:             |                  |                                   |             |             |             |             |             |             |             |             |             |             |             |             |             |  |
| 1925-26.....               | 54               | 459                               | 789         | 7,945       | 20,051      | 9,772       | 4,161       | 2,934       | 3,038       | 2,423       | 1,871       | 1,260       | 566         | 55,302      |             |  |
| 1926-27.....               | 95               | 1,569                             | 1,352       | 9,222       | 19,188      | 9,019       | 4,007       | 2,859       | 2,598       | 1,673       | 1,317       | 1,060       | 412         | 54,871      |             |  |
| 1927-28.....               | 10               | 303                               | 1,059       | 4,352       | 17,688      | 10,182      | 3,653       | 2,962       | 2,934       | 2,066       | 1,485       | 1,315       | 665         | 48,679      |             |  |
| 1928-29.....               | 34               | 1,585                             | 1,449       | 7,780       | 22,546      | 11,564      | 4,797       | 4,109       | 4,850       | 3,248       | 1,686       | 944         | 250         | 64,822      |             |  |
| 1929-30.....               | 2                | 325                               | 1,140       | 3,570       | 19,621      | 9,014       | 3,544       | 3,443       | 3,816       | 2,777       | 2,355       | 1,372       | 383         | 51,362      |             |  |
| 1930-31.....               | 32               | 1,412                             | 1,198       | 7,155       | 22,482      | 10,781      | 5,415       | 4,787       | 4,521       | 3,896       | 2,430       | 1,714       | 725         | 66,538      |             |  |
| 1931-32.....               | 61               | 1,435                             | 966         | 5,890       | 12,286      | 5,481       | 4,188       | 4,085       | 4,344       | 3,635       | 2,401       | 1,838       | 916         | 47,526      |             |  |
| 1932-33.....               | 44               | 1,809                             | 882         | 3,902       | 12,978      | 6,320       | 4,192       | 3,021       | 3,098       | 3,368       | 1,804       | 1,566       | 553         | 44,687      |             |  |
| 1933-34 <sup>2</sup> ..... | 14               | 504                               | 995         | 1,833       | 8,445       | 6,081       | 5,187       | 4,665       | 3,001       | 2,684       | 1,551       | 1,107       | 524         | 30,641      |             |  |
| 1934-35 <sup>2</sup> ..... | <sup>3</sup> 77  | 658                               | 1,275       | 7,113       | 9,426       | 5,236       | 4,028       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |  |
| Total United States:       |                  |                                   |             |             |             |             |             |             |             |             |             |             |             |             |             |  |
| 1925-26.....               | 433              | 2,895                             | 4,350       | 20,905      | 44,895      | 20,085      | 7,372       | 6,253       | 6,855       | 6,228       | 4,114       | 2,494       | 945         | 127,804     |             |  |
| 1926-27.....               | 260              | 3,840                             | 3,387       | 20,950      | 45,321      | 23,251      | 8,365       | 7,969       | 8,020       | 5,348       | 3,596       | 2,355       | 888         | 133,550     |             |  |
| 1927-28.....               | 253              | 1,815                             | 3,539       | 12,106      | 33,556      | 17,109      | 5,963       | 5,315       | 4,900       | 3,500       | 2,355       | 1,819       | 864         | 93,094      |             |  |
| 1928-29.....               | 230              | 3,452                             | 4,330       | 19,405      | 45,901      | 19,774      | 8,309       | 7,774       | 7,749       | 5,418       | 2,944       | 1,710       | 534         | 127,530     |             |  |
| 1929-30.....               | 514              | 2,022                             | 3,791       | 13,993      | 27,689      | 14,648      | 5,982       | 6,223       | 6,397       | 5,217       | 3,662       | 1,974       | 686         | 102,801     |             |  |
| 1930-31.....               | 420              | 3,327                             | 2,930       | 13,359      | 36,852      | 17,751      | 8,235       | 7,948       | 7,256       | 5,753       | 3,096       | 2,071       | 816         | 109,794     |             |  |
| 1931-32.....               | 400              | 3,149                             | 1,981       | 13,011      | 30,910      | 14,620      | 7,339       | 8,253       | 8,291       | 6,472       | 3,740       | 2,412       | 1,144       | 101,731     |             |  |
| 1932-33.....               | 275              | 2,610                             | 1,687       | 8,768       | 24,078      | 10,816      | 6,128       | 6,395       | 5,959       | 5,020       | 2,860       | 1,992       | 834         | 77,422      |             |  |
| 1933-34 <sup>2</sup> ..... | 261              | 1,512                             | 1,574       | 6,340       | 16,459      | 9,243       | 6,795       | 6,791       | 4,671       | 4,365       | 2,261       | 1,392       | 603         | 62,267      |             |  |
| 1934-35 <sup>2</sup> ..... | <sup>3</sup> 176 | 1,183                             | 1,904       | 10,673      | 17,931      | 7,771       | 5,872       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |  |

<sup>1</sup> Crop movement season covers 13 months, from June of one year through June of the following year.<sup>2</sup> Beginning January 1934, figures are preliminary.<sup>3</sup> Includes 3 cars shipped in May.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

TABLE 174.—*Apples: L. c. l. price per bushel, New York, 1930-31 to 1934-35*

| Variety and season         | Sept.          | Oct.           | Nov.           | Dec.           | Jan.           | Feb.           | Mar.           | Apr.           | May            | Average        |
|----------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Baldwin:                   | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> |
| 1930-31                    |                | 1.19           | 1.14           | 1.25           | 1.36           | 1.53           | 1.59           | 2.00           | 1.09           | 1.52           |
| 1931-32                    |                |                |                | 1.82           | 1.91           | .93            | 1.06           | 1.23           | 1.19           | 1.02           |
| 1932-33                    |                |                | 1.85           | 1.72           | 1.08           | 1.11           |                | 1.09           | 1.02           | .98            |
| 1933-34                    |                | .88            | .88            | .84            | .89            | 1.04           | 1.30           | 1.33           | 1.44           | 1.06           |
| 1934-35                    |                | 1.13           |                | 1.33           |                |                |                |                |                |                |
| McIntosh (New York State): |                |                |                |                |                |                |                |                |                |                |
| 1930-31                    | 1.62           | 1.67           | 1.72           | 1.64           | 1.53           | 1.60           | 1.97           | 2.13           | 2.53           | 1.82           |
| 1931-32                    | 1.38           | 1.70           | 1.78           | 1.79           | 1.85           |                | 2.11           | 2.12           | 1.76           | 1.81           |
| 1932-33                    | 1.06           | 1.13           | 1.18           | 1.10           | 1.15           | 1.13           | 1.25           | 1.53           |                | 1.19           |
| 1933-34                    | 1.10           | 1.15           | 1.37           | 1.46           | 1.51           | 1.60           | 1.70           | 1.97           |                | 1.48           |
| 1934-35                    | 1.61           | 1.95           | 2.05           | 1.98           |                |                |                |                |                |                |
| Greening: <sup>1</sup>     |                |                |                |                |                |                |                |                |                |                |
| 1930-31                    | 1.09           | 1.06           | 1.17           | 1.33           | 1.28           | 1.36           | 1.64           |                |                | 1.28           |
| 1931-32                    |                | 1.08           | 1.28           | 1.26           | 1.16           | 1.07           | 1.23           |                |                | 1.18           |
| 1932-33                    |                |                | .76            | .73            | .71            | .75            | .93            | 1.27           |                | .85            |
| 1933-34                    | .98            | 1.03           | 1.21           | 1.18           | 1.34           | 1.55           |                |                |                | 1.22           |
| 1934-35                    | 1.13           | 1.11           | 1.30           | 1.23           |                |                |                |                |                |                |

<sup>1</sup> Less than 10 quotations.<sup>2</sup> Includes Rhode Island Greening and Northwestern Greening.

Bureau of Agricultural Economics; compiled from daily market reports from the Bureau representative at New York.

Average prices as shown are based on stock of good merchantable quality and condition, 2½ inches unless otherwise stated; they are simple averages of daily range of selling prices. Average for season is simple average of monthly averages.

TABLE 175.—*Apples: Car-lot shipments, by State of origin, 1924-25 to 1933-34*

| State         | Crop-movement season <sup>1</sup> |             |             |             |             |             |             |             |             |                      |
|---------------|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------|
|               | 1924-25                           | 1925-26     | 1926-27     | 1927-28     | 1928-29     | 1929-30     | 1930-31     | 1931-32     | 1932-33     | 1933-34 <sup>2</sup> |
|               | <i>Cars</i>                       | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i>          |
| Maine         | 2,115                             | 1,320       | 660         | 889         | 227         | 1,333       | 989         | 154         | 1,216       | 795                  |
| New Hampshire | 805                               | 498         | 339         | 515         | 355         | 322         | 719         | 71          | 220         | 538                  |
| Vermont       | 324                               | 321         | 316         | 563         | 324         | 630         | 490         | 591         | 609         | 472                  |
| Massachusetts | 587                               | 302         | 477         | 238         | 388         | 275         | 975         | 48          | 180         | 622                  |
| New York      | 16,631                            | 29,499      | 21,680      | 10,030      | 13,671      | 9,253       | 15,429      | 9,090       | 10,579      | 6,663                |
| New Jersey    | 130                               | 441         | 340         | 701         | 354         | 331         | 906         | 200         | 158         | 104                  |
| Pennsylvania  | 1,706                             | 2,486       | 4,988       | 3,005       | 2,796       | 2,401       | 2,765       | 3,313       | 2,913       | 1,120                |
| Ohio          | 1,046                             | 1,022       | 1,739       | 837         | 1,547       | 438         | 196         | 1,643       | 391         | 219                  |
| Indiana       | 274                               | 407         | 723         | 113         | 528         | 186         | 210         | 611         | 112         | 98                   |
| Illinois      | 5,867                             | 6,561       | 6,149       | 2,552       | 5,046       | 2,326       | 3,388       | 4,779       | 1,684       | 870                  |
| Michigan      | 3,443                             | 6,008       | 4,328       | 2,002       | 2,651       | 4,053       | 1,884       | 2,819       | 1,393       | 2,084                |
| Wisconsin     | 253                               | 420         | 387         | 366         | 432         | 595         | 151         | 139         | 138         | 249                  |
| Missouri      | 2,939                             | 3,056       | 2,015       | 786         | 1,758       | 758         | 541         | 1,295       | 217         | 772                  |
| Kansas        | 1,294                             | 1,165       | 675         | 1,458       | 516         | 670         | 249         | 1,252       | 33          | 942                  |
| Delaware      | 1,384                             | 1,896       | 2,099       | 1,352       | 1,352       | 820         | 1,353       | 724         | 819         | 402                  |
| Maryland      | 1,239                             | 1,333       | 2,491       | 1,792       | 1,722       | 1,852       | 1,378       | 2,048       | 976         | 683                  |
| Virginia      | 13,079                            | 7,397       | 18,674      | 8,686       | 20,282      | 16,705      | 7,402       | 17,172      | 6,960       | 5,938                |
| West Virginia | 3,762                             | 3,927       | 7,393       | 7,054       | 6,608       | 7,385       | 3,381       | 6,987       | 3,772       | 2,638                |
| Arkansas      | 3,451                             | 3,191       | 1,842       | 629         | 1,265       | 417         | 331         | 331         | 106         | 123                  |
| Montana       | 173                               | 29          | 343         | 149         | 527         | 391         | 388         | 252         | 237         | 96                   |
| Idaho         | 2,223                             | 7,485       | 3,677       | 7,709       | 6,508       | 7,119       | 6,972       | 5,354       | 4,324       | 4,871                |
| Colorado      | 2,401                             | 3,193       | 2,877       | 2,228       | 2,804       | 2,322       | 1,082       | 1,093       | 1,361       | 683                  |
| New Mexico    | 864                               | 1,112       | 785         | 467         | 305         | 966         | 212         | 280         | 110         | 8                    |
| Utah          | 338                               | 1,198       | 450         | 423         | 611         | 196         | 1,039       | 3           | 479         | 14                   |
| Washington    | 25,155                            | 35,046      | 34,729      | 30,230      | 41,317      | 34,220      | 45,217      | 34,558      | 30,822      | 26,311               |
| Oregon        | 5,515                             | 4,702       | 6,422       | 3,396       | 6,447       | 2,680       | 5,624       | 2,139       | 3,324       | 1,748                |
| California    | 4,891                             | 2,531       | 5,084       | 4,020       | 6,300       | 3,462       | 5,953       | 3,847       | 3,930       | 2,811                |
| Other States  | 1,950                             | 1,258       | 1,868       | 839         | 889         | 695         | 520         | 938         | 129         | 374                  |
| Total         | 108,843                           | 127,804     | 133,550     | 93,094      | 127,530     | 102,801     | 109,794     | 101,731     | 77,422      | 62,267               |

<sup>1</sup> Crop-movement season extends from June of one year through June of the following year.<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

TABLE 176.—*Apples: Cold-storage holdings, United States, 1925-26 to 1934-35*BARRELS<sup>1</sup>

| Season       | Oct. 1           | Nov. 1           | Dec. 1           | Jan. 1           | Feb. 1           | Mar. 1           | Apr. 1           | May 1            | June 1           |
|--------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|              | 1,000<br>barrels | 1,000<br>barrels | 1,000<br>barrels | 1,000<br>barrels | 1,000<br>barrels | 1,000<br>barrels | 1,000<br>barrels | 1,000<br>barrels | 1,000<br>barrels |
| 1925-26..... | 885              | 3,749            | 4,245            | 3,855            | 3,157            | 2,288            | 1,307            | 617              | 221              |
| 1926-27..... | 484              | 3,188            | 4,554            | 4,077            | 3,178            | 2,152            | 1,286            | 650              | 229              |
| 1927-28..... | 449              | 1,864            | 2,055            | 1,699            | 1,266            | 846              | 501              | 262              | 121              |
| 1928-29..... | 652              | 2,978            | 2,889            | 2,354            | 1,678            | 1,128            | 652              | 319              | 108              |
| 1929-30..... | 735              | 2,189            | 2,097            | 1,762            | 1,316            | 897              | 481              | 229              | 96               |
| 1930-31..... | 500              | 1,571            | 1,456            | 1,197            | 834              | 482              | 200              | 86               | 38               |
| 1931-32..... | 398              | 2,285            | 2,177            | 1,944            | 1,322            | 762              | 369              | 165              | 63               |
| 1932-33..... | 389              | 1,242            | 1,349            | 1,209            | 924              | 609              | 337              | 182              | 64               |
| 1933-34..... | 276              | 949              | 892              | 720              | 501              | 353              | 188              | 87               | 26               |
| 1934-35..... | 209              | 872              | 797              | -----            | -----            | -----            | -----            | -----            | -----            |

BUSHEL BASKETS

|              | 1,000<br>baskets | 1,000<br>baskets | 1,000<br>baskets | 1,000<br>baskets | 1,000<br>baskets | 1,000<br>baskets | 1,000<br>baskets | 1,000<br>baskets | 1,000<br>baskets |
|--------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| 1925-26..... | 519              | 2,056            | 2,419            | 2,103            | 1,672            | 1,138            | 672              | 329              | 124              |
| 1926-27..... | 352              | 2,235            | 2,713            | 2,472            | 2,037            | 1,589            | 952              | 533              | 199              |
| 1927-28..... | 724              | 3,309            | 3,905            | 3,177            | 2,315            | 1,536            | 900              | 460              | 222              |
| 1928-29..... | 1,084            | 4,932            | 5,057            | 4,240            | 3,204            | 2,171            | 1,308            | 590              | 220              |
| 1929-30..... | 1,793            | 6,379            | 6,613            | 5,507            | 4,005            | 2,805            | 1,555            | 763              | 309              |
| 1930-31..... | 1,982            | 6,748            | 6,946            | 5,996            | 4,469            | 2,855            | 1,300            | 571              | 193              |
| 1932-32..... | 2,032            | 9,787            | 10,817           | 9,681            | 7,694            | 5,182            | 2,737            | 1,269            | 465              |
| 1932-33..... | 2,342            | 9,881            | 10,583           | 9,117            | 7,213            | 5,237            | 3,358            | 1,661            | 640              |
| 1933-34..... | 2,851            | 8,632            | 8,577            | 7,388            | 5,680            | 3,923            | 2,062            | 930              | 298              |
| 1934-35..... | 3,370            | 10,858           | 10,555           | -----            | -----            | -----            | -----            | -----            | -----            |

BOXES<sup>2</sup>

|              | 1,000<br>boxes | 1,000<br>boxes | 1,000<br>boxes | 1,000<br>boxes | 1,000<br>boxes | 1,000<br>boxes | 1,000<br>boxes | 1,000<br>boxes | 1,000<br>boxes |
|--------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1925-26..... | 1,091          | 9,165          | 13,041         | 11,868         | 10,009         | 7,898          | 5,350          | 2,892          | 1,104          |
| 1926-27..... | 1,809          | 9,523          | 15,083         | 13,365         | 10,435         | 7,298          | 4,613          | 2,312          | 717            |
| 1927-28..... | 1,043          | 9,074          | 13,423         | 12,260         | 9,809          | 7,023          | 4,960          | 2,889          | 1,223          |
| 1928-29..... | 1,854          | 12,333         | 17,452         | 15,853         | 12,388         | 7,995          | 4,889          | 2,224          | 631            |
| 1929-30..... | 901            | 11,045         | 15,235         | 13,108         | 10,149         | 7,282          | 4,790          | 2,446          | 761            |
| 1930-31..... | 2,135          | 15,669         | 21,267         | 19,137         | 15,347         | 11,371         | 6,852          | 3,683          | 1,425          |
| 1931-32..... | 3,203          | 15,472         | 16,849         | 14,617         | 11,761         | 8,789          | 5,886          | 3,392          | 1,364          |
| 1932-33..... | 2,414          | 12,873         | 14,852         | 12,794         | 10,124         | 7,179          | 4,462          | 2,463          | 938            |
| 1933-34..... | 1,567          | 11,067         | 13,874         | 11,857         | 9,239          | 6,591          | 3,766          | 1,965          | 809            |
| 1934-35..... | 8,279          | 17,750         | 18,037         | -----          | -----          | -----          | -----          | -----          | -----          |

TOTAL<sup>3</sup>

|              | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels |
|--------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| 1925-26..... | 4,266            | 22,467           | 28,194           | 25,536           | 21,153           | 15,900           | 9,942            | 5,073            | 1,890            |
| 1926-27..... | 3,612            | 21,321           | 31,458           | 28,068           | 22,005           | 15,342           | 9,423            | 4,794            | 1,602            |
| 1927-28..... | 3,114            | 17,976           | 23,493           | 20,534           | 15,923           | 11,097           | 7,363            | 4,134            | 1,808            |
| 1928-29..... | 4,893            | 26,199           | 31,177           | 27,154           | 20,626           | 13,551           | 8,153            | 3,772            | 1,174            |
| 1929-30..... | 4,900            | 23,991           | 28,139           | 23,902           | 18,102           | 12,778           | 7,787            | 3,895            | 1,358            |
| 1930-31..... | 5,618            | 27,129           | 32,580           | 28,725           | 22,317           | 15,672           | 8,751            | 4,512            | 1,731            |
| 1931-32..... | 6,429            | 32,115           | 34,197           | 30,129           | 23,421           | 16,257           | 9,729            | 5,157            | 2,019            |
| 1932-33..... | 5,922            | 26,481           | 29,433           | 25,539           | 21,109           | 14,244           | 8,682            | 4,701            | 1,770            |
| 1933-34..... | 5,247            | 22,545           | 25,128           | 21,405           | 16,422           | 11,574           | 6,393            | 3,156            | 1,185            |
| 1934-35..... | 12,276           | 31,224           | 30,983           | -----            | -----            | -----            | -----            | -----            | -----            |

<sup>1</sup> Mostly in eastern and central United States.<sup>2</sup> Mostly western apples.<sup>3</sup> 1 barrel is considered the equivalent of 3 boxes or 3 bushel baskets.

Bureau of Agricultural Economics; compiled from reports made by cold-storage establishments.

TABLE 177.—*Apples:*<sup>1</sup> *International trade, average 1925-29, annual 1930-33*

| Country                            | Calendar year    |                  |                  |                  |                  |                  |                  |                  |                   |                  |
|------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|------------------|
|                                    | Average 1925-29  |                  | 1930             |                  | 1931             |                  | 1932             |                  | 1933 <sup>2</sup> |                  |
|                                    | Exports          | Imports          | Exports          | Imports          | Exports          | Imports          | Exports          | Imports          | Exports           | Imports          |
| PRINCIPAL EXPORT-<br>ING COUNTRIES | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels  | 1,000<br>bushels |
| United States.....                 | 14, 448          | 137              | 15, 850          | 157              | 17, 785          | 36               | 16, 919          | 54               | 11, 029           | 7                |
| Canada.....                        | 3, 626           | 542              | 6, 390           | 485              | 4, 783           | 424              | 4, 708           | 225              | 8, 716            | 113              |
| Australia <sup>3</sup> .....       | 2, 161           | 0                | 3, 621           | 0                | 2, 770           | 0                | 3, 916           | 0                | 4, 737            | 0                |
| France <sup>4</sup> .....          | 1, 876           | 608              | 1, 314           | 1, 737           | 1, 722           | 3, 016           | 1, 769           | 2, 548           | 3, 331            | 1, 579           |
| Italy.....                         | 1, 597           | 1                | 1, 908           | 3                | 1, 535           | 6                | 1, 236           | 0                | 1, 358            | 5                |
| Netherlands.....                   | 1, 309           | 422              | 448              | 778              | 721              | 911              | 998              | 1, 114           | 1, 331            | 970              |
| Belgium.....                       | 1, 122           | 303              | 1, 005           | 704              | 486              | 964              | 1, 927           | 618              | 1, 282            | 980              |
| Rumania.....                       | 734              | 51               | 604              | 63               | 354              | 17               | 140              | 1                | 343               | 0                |
| Yugoslavia.....                    | 783              | 2                | 2, 688           | 2                | 865              | 5                | 1, 999           | 1                | 1, 092            | 0                |
| New Zealand.....                   | 565              | 31               | 1, 072           | 27               | 1, 081           | 12               | 1, 259           | 4                |                   | 5                |
| Total.....                         | 28, 221          | 2, 047           | 34, 900          | 3, 896           | 32, 102          | 5, 391           | 34, 871          | 4, 574           | 33, 269           | 3, 659           |
| PRINCIPAL IMPORT-<br>ING COUNTRIES |                  |                  |                  |                  |                  |                  |                  |                  |                   |                  |
| United Kingdom.....                | 0                | 14, 247          | 0                | 13, 583          | 0                | 17, 007          | 0                | 18, 078          | 0                 | 16, 615          |
| Germany.....                       | 34               | 8, 415           | 40               | 11, 195          | 157              | 5, 444           | 116              | 11, 758          | 43                | 9, 879           |
| Sweden.....                        | 0                | 754              | 150              | 633              | 0                | 828              | 0                | 799              | 73                | 4, 449           |
| Denmark.....                       | 1                | 634              | 3                | 674              | 0                | 912              | 1                | 453              | 101               | 354              |
| Irish Free State.....              | 2                | 469              | 6                | 449              | 5                | 475              | 7                | 517              |                   | 401              |
| Egypt.....                         | 2                | 379              | 1                | 360              | 2                | 194              | 1                | 161              | 0                 | 184              |
| Norway.....                        | 0                | 4 202            | 0                | 4 170            | 0                | 4 210            | 0                | 147              | 1                 | 94               |
| Brazil.....                        | 0                | 191              | 0                | 114              | 0                | 146              | 0                | 134              | 0                 | 59               |
| Finland.....                       | 0                | 178              | 0                | 186              | 0                | 141              | 0                | 86               | 0                 | 278              |
| Cuba.....                          | 0                | 96               | 0                | 30               | 0                | 58               | 0                | 46               | 0                 |                  |
| Poland.....                        | 18               | 88               | 150              | 434              | 7                | 375              | 3                | 163              | 0                 |                  |
| Total.....                         | 57               | 25, 703          | 350              | 27, 953          | 171              | 25, 791          | 128              | 32, 342          | 218               | 28, 293          |

<sup>1</sup> Foreign weights are converted to bushels on the basis of 48 pounds per bushel; domestic, 1 barrel equals 3 boxes (or bushels).

<sup>2</sup> Preliminary.

<sup>3</sup> Year ended June 30.

<sup>4</sup> Includes pears.

<sup>5</sup> 4-year average.

<sup>6</sup> Includes pears and quinces.

Bureau of Agricultural Economics; official sources.

TABLE 178.—*Apricots: Production and average price per ton received by producers, California, 1925-34*

| Item  | 1925     | 1926     | 1927     | 1928     | 1929     | 1930     | 1931     | 1932     | 1933     | 1934 <sup>1</sup> |
|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------------------|
| Production.....short tons..                         | 150, 000 | 176, 000 | 208, 000 | 175, 000 | 215, 000 | 200, 000 | 277, 000 | 270, 000 | 268, 000 | 140, 000          |
| Price.....dollars.....                              | 54. 00   | 63. 00   | 57. 00   | 50. 00   | 63. 00   | 39. 00   | 29. 00   | 17. 70   | 29. 70   | 53. 45            |
| Farm value, basis average price.....1,000 dollars.. | 8, 100   | 11, 088  | 11, 856  | 8, 750   | 13, 545  | 7, 476   | 7, 917   | 4, 549   | 7, 960   | 7, 483            |

<sup>1</sup> Preliminary.

<sup>2</sup> Includes some fruit not harvested on account of market conditions (but not included in computing value), as follows: 1930, 8,300 tons; 1931, 4,000 tons; 1932, 13,000 tons.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 179.—*Asparagus, commercial crop: Acreage, production, and season average price per crate and per ton received by producers, average 1928-32, annual 1933 and 1934*

| Utilization          | Acreage                |                        |                        | Production                                    |   |   | Price for crop of—     |                        |                        |
|----------------------|------------------------|------------------------|------------------------|---|---|---|------------------------|------------------------|------------------------|
|                      | Average<br>1928-32     | 1933                   | 1934                   | Average<br>1928-32                            | 1933  | 1934  | Average<br>1928-32     | 1933                   | 1934                   |
| For market.....      | <i>Acres</i><br>56,490 | <i>Acres</i><br>60,630 | <i>Acres</i><br>65,710 | <i>1,000<br/>crates</i> <sup>1</sup><br>4,430 | <i>1,000<br/>crates</i> <sup>1</sup><br>4,729 | <i>1,000<br/>crates</i> <sup>1</sup><br>5,406 | <i>Dollars</i><br>2.15 | <i>Dollars</i><br>1.26 | <i>Dollars</i><br>1.26 |
| For manufacture..... | 41,150                 | 55,470                 | 47,120                 | <i>Short<br/>tons</i><br>59,360               | <i>Short<br/>tons</i><br>67,700               | <i>Short<br/>tons</i><br>56,500               | 74.44                  | 56.00                  | 63.38                  |

<sup>1</sup> Crates containing approximately 24 pounds.

Bureau of Agricultural Economics; estimates based on returns from crop reporters and canning establishments.

TABLE 180.—*Artichokes, commercial crop: Acreage, production, and season average price per box received by producers, average 1928-32, annual 1933 and 1934*

| State           | Acreage               |                       |                       | Production                                 |  |  | Price for crop of—     |                        |                        |
|-----------------|-----------------------|-----------------------|-----------------------|--|--|--|------------------------|------------------------|------------------------|
|                 | Average<br>1928-32    | 1933                  | 1934                  | Average<br>1928-32                         | 1933                                       | 1934   | Average<br>1928-32     | 1933                   | 1934                   |
| California..... | <i>Acres</i><br>7,770 | <i>Acres</i><br>6,350 | <i>Acres</i><br>8,350 | <i>1,000<br/>boxes</i> <sup>1</sup><br>873 | <i>1,000<br/>boxes</i> <sup>1</sup><br>743 | <i>1,000<br/>boxes</i> <sup>1</sup><br>1,060 | <i>Dollars</i><br>1.93 | <i>Dollars</i><br>1.24 | <i>Dollars</i><br>1.00 |

<sup>1</sup> Boxes containing approximately 40 pounds.

Bureau of Agricultural Economics; estimates based on returns from crop reporters.

TABLE 181.—*Avocados: Production and average price per ton or per box received by producers, California and Florida, 1924-34*

| Year      | California            |                  |   | Year                    | California            |                  |   | Florida                   |                                  |   |
|-----------|-----------------------|------------------|---|-------------------------|-----------------------|------------------|---|---------------------------|----------------------------------|---|
|           | Pro-<br>duction       | Price<br>per ton | Farm<br>value,<br>basis<br>average<br>price |                         | Pro-<br>duction       | Price<br>per ton | Farm<br>value,<br>basis<br>average<br>price | Pro-<br>duction           | Price<br>per<br>box <sup>1</sup> | Farm<br>value,<br>basis<br>average<br>price |
|           | <i>Short<br/>tons</i> | <i>Dollars</i>   | <i>1,000<br/>dollars</i>                    |                         | <i>Short<br/>tons</i> | <i>Dollars</i>   | <i>1,000<br/>dollars</i>                    | <i>Boxes</i> <sup>1</sup> | <i>Dollars</i>                   | <i>1,000<br/>dollars</i>                    |
| 1924..... | 129                   | 720              | 93  | 1929.....               | 396                   | 658              | 261   | 21,000                    | 2.85                             | 60  |
| 1925..... | 233                   | 540              | 126   | 1930.....               | 2,110                 | 290              | 549   | 31,000                    | 3.85                             | 119   |
| 1926..... | 625                   | 400              | 250   | 1931.....               | 2,525                 | 166              | 419   | 41,000                    | 2.90                             | 119   |
| 1927..... | 819                   | 680              | 217   | 1932.....               | 1,647                 | 171              | 282   | 70,000                    | 1.75                             | 122   |
| 1928..... | 1,125                 | 330              | 371   | 1933.....               | 2,450                 | 168              | 412   | 110,000                   | 1.95                             | 214   |
|           |                       |                  |   | 1934 <sup>2</sup> ..... | 9,360                 | 60               | 562   | 100,000                   | 1.50                             | 150   |

<sup>1</sup> Boxes of 40 pounds.<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 182.—*Beans, lima, commercial crop: Acreage, production, and season average price per bushel and per ton received by producers; average 1928-32, annual 1933 and 1934*

| Utilization          | Acreage                |                         |                         | Production   |  |   | Price for crop of—      |                         |                         |
|----------------------|------------------------|-------------------------|-------------------------|--|--|---|-------------------------|-------------------------|-------------------------|
|                      | Average<br>1928-32     | 1933                    | 1934                    | Average<br>1928-32                                     | 1933                                     | 1934                                      | Average<br>1928-32      | 1933                    | 1934                    |
| For market.....      | <i>Acres</i><br>9, 230 | <i>Acres</i><br>11, 850 | <i>Acres</i><br>12, 350 | <i>1,000 bushels</i><br>601                            | <i>1,000 bushels</i><br>568              | <i>1,000 bushels</i><br>580               | <i>Dollars</i><br>1. 84 | <i>Dollars</i><br>1. 02 | <i>Dollars</i><br>1. 12 |
| For manufacture..... | <sup>3</sup> 25, 550   | 16, 430                 | 24, 350                 | <i>Short tons</i> <sup>2</sup><br><sup>3</sup> 12, 620 | <i>Short tons</i> <sup>2</sup><br>8, 860 | <i>Short tons</i> <sup>2</sup><br>16, 710 | <sup>3</sup> 76. 21     | 56. 66                  | 59. 49                  |

<sup>1</sup> Bushels containing approximately 32 pounds, unshelled.<sup>2</sup> Reported on shelled basis.<sup>3</sup> Short-time average.

Bureau of Agricultural Economics; estimates based on returns from crop reporters and canning establishments.

TABLE 183.—*Beans, snap, commercial crop: Acreage, production, and season average price per bushel and per ton received by producers; average 1928-32, annual 1933 and 1934*

| Utilization          | Acreage                  |                          |                          | Production                                  |  |  | Price for crop of—      |                         |                         |
|----------------------|--------------------------|--------------------------|--------------------------|---|--|--|-------------------------|-------------------------|-------------------------|
|                      | Average<br>1928-32       | 1933                     | 1934                     | Average<br>1928-32                          | 1933   | 1934   | Average<br>1928-32      | 1933                    | 1934                    |
| For market.....      | <i>Acres</i><br>107, 230 | <i>Acres</i><br>123, 000 | <i>Acres</i><br>147, 100 | <i>1,000 bushels</i><br><sup>2</sup> 9, 447 | <i>1,000 bushels</i><br><sup>2</sup> 10, 832 | <i>1,000 bushels</i><br><sup>2</sup> 13, 486 | <i>Dollars</i><br>1. 41 | <i>Dollars</i><br>0. 91 | <i>Dollars</i><br>0. 83 |
| For manufacture..... | 54, 710                  | 40, 770                  | 44, 850                  | <i>Short tons</i><br>73, 100                | <i>Short tons</i><br>60, 200                 | <i>Short tons</i><br>67, 400                 | 55. 46                  | 38. 59                  | 41. 19                  |

<sup>1</sup> Bushels containing approximately 30 pounds.<sup>2</sup> Includes some quantities not harvested on account of market conditions: 437,000 bushels in 1930; 150,000 in 1931; 695,000 in 1932; 263,000 in 1933, and 976,000 bushels in 1934. Price refers to harvested portion of crop.

Bureau of Agricultural Economics; estimates based on returns from crop reporters and canning establishments.

TABLE 184.—*Beans, snap: Car-lot shipments, by State of origin, 1923-34*

| State               | Calendar year <sup>1</sup> |             |             |             |             |             |             |             |             |             |             |                   |
|---------------------|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|
|                     | 1923                       | 1924        | 1925        | 1926        | 1927        | 1928        | 1929        | 1930        | 1931        | 1932        | 1933        | 1934 <sup>2</sup> |
|                     | <i>Cars</i>                | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i>       |
| New York.....       | 33                         | 81          | 62          | 39          | 31          | 49          | 69          | 30          | 98          | 66          | 15          | 22                |
| New Jersey.....     | 15                         | 100         | 48          | 56          | 203         | 110         | 61          | 114         | 129         | 58          | 137         | 183               |
| Maryland.....       | 49                         | 136         | 127         | 197         | 235         | 246         | 214         | 352         | 479         | 238         | 178         | 217               |
| Virginia.....       | 101                        | 899         | 570         | 841         | 877         | 657         | 1, 025      | 541         | 598         | 663         | 335         | 540               |
| North Carolina..... | 261                        | 559         | 459         | 550         | 504         | 690         | 736         | 998         | 711         | 626         | 474         | 502               |
| South Carolina..... | 585                        | 517         | 324         | 449         | 425         | 439         | 779         | 682         | 721         | 563         | 263         | 473               |
| Georgia.....        | 26                         | 68          | 27          | 52          | 96          | 48          | 152         | 230         | 175         | 139         | 48          | 132               |
| Florida.....        | 1, 644                     | 1, 157      | 1, 992      | 946         | 2, 583      | 2, 700      | 3, 254      | 4, 118      | 4, 319      | 6, 941      | 7, 868      | 9, 328            |
| Tennessee.....      | 81                         | 248         | 84          | 174         | 45          | 119         | 132         | 233         | 83          | 50          | 16          | 47                |
| Mississippi.....    | 47                         | 85          | 88          | 130         | 143         | 192         | 312         | 310         | 208         | 284         | 45          | 418               |
| Arkansas.....       | 2                          | 7           | 13          | 18          | 18          | 69          | 92          | 130         | 36          | 28          | 3           | 2                 |
| Louisiana.....      | 107                        | 439         | 683         | 588         | 662         | 822         | 1, 156      | 744         | 857         | 525         | 360         | 769               |
| Texas.....          | 88                         | 210         | 407         | 414         | 471         | 294         | 366         | 654         | 607         | 395         | 429         | 163               |
| Colorado.....       |                            |             | 5           |             |             | 3           | 58          | 165         | 76          | 10          | 42          | 6                 |
| California.....     | 26                         | 32          | 118         | 127         | 60          | 116         | 77          | 119         | 92          | 73          | 173         | 156               |
| Other States.....   | 59                         | 154         | 116         | 126         | 123         | 132         | 153         | 139         | 159         | 136         | 83          | 95                |
| Total.....          | 3, 124                     | 4, 692      | 5, 133      | 4, 707      | 6, 481      | 6, 686      | 8, 626      | 9, 559      | 9, 348      | 10, 795     | 10, 528     | 13, 053           |

<sup>1</sup> Crop-movement season is for calendar year, except Florida which begins in October of the preceding year.<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included. Beginning 1931 figures include lima beans in pod.

TABLE 185.—*Beets, commercial crop: Acreage, production, and season average price per bushel and per ton received by producers; average 1928-32, annual 1933 and 1934*

| Utilization      | Acreage               |                        |                        | Production                               |                               |                               | Price for crop of—     |                        |                        |
|------------------|-----------------------|------------------------|------------------------|--|-------------------------------|-------------------------------|------------------------|------------------------|------------------------|
|                  | Average<br>1928-32    | 1933                   | 1934                   | Average<br>1928-32                       | 1933                          | 1934                          | Average<br>1928-32     | 1933                   | 1934                   |
| For market.....  | <i>Acres</i><br>9,560 | <i>Acres</i><br>10,400 | <i>Acres</i><br>12,220 | <i>1,000 bushels</i><br>1,770            | <i>1,000 bushels</i><br>1,657 | <i>1,000 bushels</i><br>2,254 | <i>Dollars</i><br>0.53 | <i>Dollars</i><br>0.48 | <i>Dollars</i><br>0.43 |
| For canning..... | <sup>3</sup> 6,340    | 4,040                  | 5,690                  | <i>Short tons</i><br><sup>3</sup> 35,900 | <i>Short tons</i><br>24,800   | <i>Short tons</i><br>33,800   | <sup>3</sup> 13.26     | 9.72                   | 10.53                  |

<sup>1</sup> Bushels containing approximately 52 pounds.<sup>2</sup> Includes 450,000 bushels in 1931 not harvested on account of market conditions. Price refers to harvested portion of crop.<sup>3</sup> Short-time average.

Bureau of Agricultural Economics; estimates based on returns from crop reporters and canning establishments.

TABLE 186.—*Cabbage, commercial crop: Acreage, production, and season average price per ton received by producers, by States; average 1928-32, annual 1933 and 1934*

## FOR MARKET AND SAUERKRAUT

| Group and State                 | Acreage            |              |              | Production           |                      |                      | Price for crop of— |                |                |
|---------------------------------|--------------------|--------------|--------------|----------------------|----------------------|----------------------|--------------------|----------------|----------------|
|                                 | Average<br>1928-32 | 1933         | 1934         | Average<br>1928-32   | 1933                 | 1934                 | Average<br>1928-32 | 1933           | 1934           |
| <b>Fall:</b>                    | <i>Acres</i>       | <i>Acres</i> | <i>Acres</i> | <i>Short tons</i>    | <i>Short tons</i>    | <i>Short tons</i>    | <i>Dollars</i>     | <i>Dollars</i> | <i>Dollars</i> |
| South Carolina.....             | 640                | 1,100        | 900          | 5,200                | 4,400                | 7,200                | 41.82              | 10.00          | 30.00          |
| Virginia, Norfolk.....          | 170                | 200          | 100          | 700                  | 1,000                | 400                  | 45.12              | 15.00          | 33.50          |
| Total.....                      | 810                | 1,300        | 1,000        | 5,900                | 5,400                | 7,600                | 42.20              | 11.11          | 30.13          |
| <b>Early:</b>                   |                    |              |              |                      |                      |                      |                    |                |                |
| California.....                 | 4,430              | 4,400        | 5,250        | <sup>2</sup> 26,000  | 30,800               | <sup>2</sup> 31,500  | 23.40              | 19.20          | 13.10          |
| Florida.....                    | 5,020              | 6,200        | 10,700       | <sup>2</sup> 30,100  | <sup>2</sup> 43,400  | <sup>2</sup> 64,200  | 37.02              | 16.00          | 16.00          |
| Louisiana.....                  | 3,060              | 2,200        | 4,000        | 12,700               | 8,400                | <sup>2</sup> 18,000  | 24.82              | 21.60          | 10.60          |
| Texas.....                      | 24,400             | 18,100       | 38,600       | <sup>2</sup> 140,100 | 67,000               | <sup>2</sup> 212,300 | 22.12              | 8.30           | 7.00           |
| Total.....                      | 36,910             | 30,900       | 58,550       | <sup>2</sup> 208,900 | <sup>2</sup> 149,600 | <sup>2</sup> 326,000 | 24.61              | 13.40          | 9.65           |
| <b>Second early:</b>            |                    |              |              |                      |                      |                      |                    |                |                |
| Alabama.....                    | 1,800              | 1,800        | 3,000        | 10,400               | 7,200                | <sup>2</sup> 20,400  | 38.02              | 25.00          | 5.00           |
| Georgia.....                    | 400                | 1,000        | 800          | 2,300                | 4,000                | 3,200                | 30.52              | 24.00          | 10.00          |
| Mississippi.....                | 3,030              | 3,500        | 5,800        | 15,000               | 13,300               | <sup>2</sup> 32,500  | 33.46              | 32.50          | 6.10           |
| North Carolina.....             | 770                | 850          | 1,300        | 3,900                | 3,400                | 5,200                | 32.40              | 26.00          | 10.00          |
| South Carolina.....             | 2,680              | 1,800        | 1,200        | <sup>2</sup> 26,000  | 18,900               | 5,400                | 34.48              | 24.00          | 16.00          |
| Virginia.....                   | 4,580              | 4,850        | 3,300        | <sup>2</sup> 21,200  | 17,800               | <sup>2</sup> 15,600  | 29.32              | 24.80          | 11.40          |
| Eastern Shore.....              | 1,470              | 2,000        | 1,500        | <sup>2</sup> 8,200   | 9,000                | <sup>2</sup> 7,500   | 26.28              | 26.00          | 12.50          |
| Norfolk.....                    | 3,110              | 2,850        | 1,800        | <sup>2</sup> 13,000  | 8,800                | <sup>2</sup> 8,100   | 31.40              | 23.50          | 10.00          |
| Total.....                      | 13,440             | 13,800       | 15,400       | <sup>2</sup> 78,800  | 64,000               | <sup>2</sup> 82,300  | 33.49              | 26.18          | 7.92           |
| <b>Intermediate:</b>            |                    |              |              |                      |                      |                      |                    |                |                |
| Arkansas.....                   | 440                | 320          | 250          | 1,600                | 1,100                | 500                  | 21.00              | 35.00          | 20.00          |
| Illinois.....                   | 2,040              | 2,200        | 2,400        | 16,800               | 10,800               | 9,800                | 14.10              | 26.60          | 14.50          |
| Iowa.....                       | 1,650              | 1,900        | 2,000        | 11,300               | 8,900                | 6,000                | 14.08              | 17.50          | 17.70          |
| Kentucky.....                   | 190                | 210          | 220          | 1,200                | 1,000                | 1,200                | 26.80              | 30.00          | 22.00          |
| Maryland.....                   | 2,180              | 2,330        | 1,920        | 11,200               | 10,700               | 9,600                | 25.38              | 24.50          | 12.50          |
| Missouri.....                   | 950                | 1,000        | 900          | 5,700                | 4,500                | 2,700                | 18.88              | 36.00          | 26.00          |
| New Jersey.....                 | 4,340              | 5,500        | 6,200        | 23,100               | 30,800               | 32,900               | 23.00              | 20.00          | 13.00          |
| New Mexico.....                 | 420                | 250          | 400          | 3,100                | 1,400                | 2,000                | 18.80              | 25.00          | 18.00          |
| New York, Long Is-<br>land..... | 2,980              | 2,650        | 2,600        | 28,300               | 25,400               | 26,000               | 20.34              | 22.00          | 20.00          |
| Ohio, southeast.....            | 800                | 600          | 700          | <sup>2</sup> 6,200   | 2,700                | 3,500                | 20.96              | 40.00          | 24.00          |
| Tennessee.....                  | 2,300              | 1,500        | 1,890        | 13,600               | 7,500                | 12,700               | 22.50              | 31.30          | 19.90          |

See footnotes at end of table.

TABLE 186.—Cabbage, commercial crop: Acreage, production, and season average price per ton received by producers, by States; average 1928-32, annual 1933 and 1934—Continued

## FOR MARKET AND SAUERKRAUT—Continued

| Group and State                | Acreage            |              |              | Production             |                       |                       | Price for crop of— |                |                |
|--------------------------------|--------------------|--------------|--------------|------------------------|-----------------------|-----------------------|--------------------|----------------|----------------|
|                                | Average<br>1928-32 | 1933         | 1934         | Average<br>1928-32     | 1933                  | 1934                  | Average<br>1928-32 | 1933           | 1934           |
| Intermediate—Contd.            | <i>Acres</i>       | <i>Acres</i> | <i>Acres</i> | <i>Short<br/>tons</i>  | <i>Short<br/>tons</i> | <i>Short<br/>tons</i> | <i>Dollars</i>     | <i>Dollars</i> | <i>Dollars</i> |
| Virginia, southwest...         | 2,550              | 2,500        | 2,800        | 14,300                 | 10,000                | 11,200                | 18.02              | 21.30          | 13.30          |
| Washington.....                | 2,000              | 1,800        | 2,000        | 16,900                 | 12,600                | 16,000                | 13.88              | 11.90          | 11.00          |
| Total <sup>3</sup> .....       | 22,820             | 22,760       | 24,280       | <sup>4</sup> 153,300   | 127,400               | 134,100               | 18.91              | 22.38          | 15.18          |
| Late (domestic):               |                    |              |              |                        |                       |                       |                    |                |                |
| Colorado.....                  | 1,550              | 1,500        | 1,700        | <sup>5</sup> 15,800    | 16,500                | 13,800                | 13.30              | 18.90          | 20.80          |
| Indiana.....                   | 2,580              | 2,800        | 3,400        | 18,900                 | 12,900                | 20,400                | 9.58               | 13.80          | 7.60           |
| Michigan.....                  | 3,220              | 2,800        | 3,600        | 23,800                 | 16,500                | 28,800                | 7.40               | 18.40          | 6.50           |
| Minnesota.....                 | 1,100              | 1,000        | 1,000        | 8,200                  | 6,200                 | 6,200                 | 9.14               | 15.60          | 11.50          |
| New York.....                  | 10,140             | 8,000        | 9,700        | <sup>6</sup> 90,100    | 52,400                | 97,000                | 10.12              | 13.80          | 5.00           |
| Ohio.....                      | 2,860              | 2,280        | 3,000        | 23,200                 | 8,400                 | 26,400                | 6.98               | 10.00          | 6.30           |
| Oregon.....                    | 2,000              | 1,700        | 1,700        | 12,100                 | 14,000                | 14,400                | 16.68              | 18.40          | 12.70          |
| Pennsylvania.....              | 1,130              | 1,050        | 1,000        | 9,600                  | 7,200                 | 8,000                 | 15.22              | 19.30          | 12.70          |
| Utah.....                      | 430                | 400          | 450          | 5,800                  | 4,000                 | 5,500                 | 10.78              | 12.20          | 9.80           |
| Wisconsin.....                 | 10,620             | 7,200        | 13,000       | 81,000                 | 43,900                | 101,400               | 8.18               | 13.80          | 7.70           |
| Total <sup>3</sup> .....       | 35,130             | 29,010       | 38,560       | <sup>7</sup> 288,500   | 181,600               | 321,900               | 9.54               | 14.78          | 7.86           |
| Late (Danish): <sup>4</sup>    |                    |              |              |                        |                       |                       |                    |                |                |
| Colorado.....                  | 2,060              | 1,960        | 2,000        | 24,400                 | 22,700                | 17,000                | 11.80              | 15.00          | 17.50          |
| Indiana.....                   | <sup>8</sup> 300   | 400          | 400          | <sup>5</sup> 2,100     | 2,000                 | 2,800                 | <sup>5</sup> 13.60 | 21.00          | 9.00           |
| Michigan.....                  | 530                | 700          | 900          | 4,000                  | 3,800                 | 7,600                 | 13.50              | 23.00          | 7.00           |
| Minnesota.....                 | 1,940              | 1,760        | 1,500        | 11,800                 | 8,800                 | 10,500                | 13.34              | 17.50          | 9.00           |
| New York.....                  | 20,460             | 16,800       | 21,350       | <sup>6</sup> 163,700   | 122,600               | 209,200               | 12.40              | 16.90          | 4.00           |
| Ohio.....                      | 430                | 480          | 600          | 2,900                  | 2,800                 | 4,500                 | 13.86              | 18.00          | 8.50           |
| Pennsylvania.....              | 650                | 500          | 600          | 4,800                  | 3,900                 | 4,800                 | 14.78              | 16.00          | 9.00           |
| Wisconsin.....                 | 8,290              | 5,000        | 10,000       | 61,700                 | 32,500                | 85,000                | 11.36              | 17.00          | 7.00           |
| Total <sup>3</sup> .....       | 34,630             | 27,600       | 37,350       | <sup>7</sup> 275,000   | 199,100               | 341,400               | 11.99              | 16.87          | 8.81           |
| Grand total <sup>3</sup> ..... | 143,740            | 125,370      | 175,130      | <sup>8</sup> 1,010,400 | 727,700               | 1,213,300             | 16.16              | 17.42          | 8.64           |

FOR SAUERKRAUT <sup>6</sup>

|                                 |        |        |        |         |        |         |       |       |       |
|---------------------------------|--------|--------|--------|---------|--------|---------|-------|-------|-------|
| New York.....                   | 6,220  | 6,900  | 7,200  | 55,700  | 45,500 | 73,400  | 7.70  | 13.40 | 5.90  |
| Ohio.....                       | 2,510  | 1,800  | 2,580  | 20,000  | 6,100  | 23,500  | 6.20  | 7.10  | 5.00  |
| Indiana.....                    | 1,500  | 1,600  | 2,600  | 10,300  | 6,400  | 14,800  | 6.80  | 7.90  | 6.60  |
| Illinois.....                   | 630    | 800    | 860    | 4,600   | 2,700  | 4,000   | 10.40 | 16.10 | 10.00 |
| Michigan.....                   | 1,530  | 700    | 1,280  | 11,500  | 3,900  | 11,000  | 6.40  | 6.80  | 5.70  |
| Wisconsin.....                  | 5,200  | 3,000  | 6,600  | 42,200  | 18,900 | 50,800  | 7.60  | 9.50  | 6.30  |
| Minnesota.....                  | 410    | 150    | 350    | 3,400   | 800    | 2,500   | 6.60  | 6.20  | 6.40  |
| Colorado.....                   | 390    | 200    | 420    | 4,400   | 2,200  | 2,700   | 7.90  | 12.00 | 15.80 |
| Washington.....                 | 290    | 200    | 300    | 2,300   | 1,800  | 2,100   | 11.20 | 11.00 | 9.60  |
| Other States <sup>7</sup> ..... | 1,590  | 1,290  | 1,870  | 11,300  | 7,100  | 12,600  | 9.56  | 9.01  | 6.98  |
| Total.....                      | 20,240 | 16,440 | 24,060 | 165,700 | 95,400 | 197,400 | 7.53  | 11.21 | 6.35  |

<sup>1</sup> Season begins in fall of previous year.<sup>2</sup> Includes some quantities not harvested on account of market conditions; California, 7,500 tons in 1931, and 6,500 in 1934; Florida, 7,100 tons in 1931, 6,500 in 1933, and 21,400 in 1934; Louisiana, 2,000 tons in 1934; Texas, 37,500 tons in 1931, and 70,500 in 1934; Alabama, 4,200 tons in 1934; Mississippi, 4,700 tons in 1934; South Carolina, 10,200 tons in 1931; Virginia, Eastern Shore, 1,400 tons and Norfolk section, 5,000 tons in 1931; Eastern Shore, 1,500 tons and Norfolk section, 3,500 tons in 1934; Ohio (southeast), 2,200 tons in 1931; Colorado, 4,000 tons of domestic and 8,300 of Danish in 1932; New York, domestic, 12,000 tons in 1932. Price refers to harvested portion of crop.<sup>3</sup> Includes quantities used by sauerkraut manufacturers.<sup>4</sup> Average price for late Danish crop is computed only to Dec. 1.<sup>5</sup> Short-time average.<sup>6</sup> All these figures are included in upper portion of this table but are segregated here for convenient reference.<sup>7</sup> Other States includes Iowa, Maryland, New Jersey, North Carolina, Oregon, Pennsylvania, Tennessee, Texas, Utah, and Virginia.

Bureau of Agricultural Economics; estimates based on returns from crop reporters and sauerkraut manufacturers.



TABLE 187.—*Cabbage: Car-lot shipments, by State of origin, 1923-33*

| State               | Crop-movement season <sup>1</sup> |             |             |             |             |             |             |             |             |             |                   |
|---------------------|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|
|                     | 1923                              | 1924        | 1925        | 1926        | 1927        | 1928        | 1929        | 1930        | 1931        | 1932        | 1933 <sup>2</sup> |
|                     | <i>Cars</i>                       | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i>       |
| New York.....       | 9,086                             | 11,816      | 12,545      | 12,898      | 14,080      | 8,636       | 10,609      | 11,917      | 12,014      | 9,778       | 5,614             |
| Pennsylvania.....   | 317                               | 409         | 552         | 523         | 420         | 252         | 302         | 216         | 194         | 88          | 173               |
| Ohio.....           | 538                               | 658         | 414         | 544         | 765         | 581         | 555         | 66          | 484         | 126         | 105               |
| Illinois.....       | 289                               | 279         | 198         | 195         | 193         | 329         | 296         | 355         | 188         | 390         | 71                |
| Michigan.....       | 732                               | 644         | 573         | 287         | 375         | 428         | 256         | 153         | 137         | 329         | 85                |
| Wisconsin.....      | 6,415                             | 4,955       | 5,409       | 5,177       | 4,547       | 6,412       | 5,395       | 5,959       | 3,156       | 3,292       | 2,272             |
| Minnesota.....      | 989                               | 1,552       | 873         | 1,125       | 1,009       | 1,493       | 1,200       | 683         | 493         | 778         | 692               |
| Iowa.....           | 390                               | 541         | 265         | 459         | 435         | 566         | 442         | 504         | 184         | 425         | 169               |
| Maryland.....       | 220                               | 509         | 238         | 166         | 293         | 266         | 428         | 67          | 75          | 70          | 163               |
| Virginia.....       | 3,326                             | 3,400       | 2,225       | 1,814       | 2,720       | 2,444       | 3,969       | 1,772       | 1,821       | 1,060       | 1,535             |
| North Carolina..... | 364                               | 275         | 356         | 341         | 292         | 254         | 261         | 214         | 189         | 88          | 127               |
| South Carolina..... | 4,299                             | 1,530       | 3,421       | 2,671       | 1,900       | 2,209       | 2,549       | 2,731       | 1,864       | 934         | 1,701             |
| Georgia.....        | 108                               | 50          | 91          | 66          | 58          | 14          | 117         | 5           | 6           | 68          | 201               |
| Florida.....        | 1,172                             | 3,842       | 1,936       | 1,667       | 1,051       | 1,168       | 3,136       | 2,271       | 3,261       | 1,521       | 2,873             |
| Tennessee.....      | 270                               | 348         | 317         | 609         | 667         | 825         | 1,256       | 952         | 530         | 316         | 506               |
| Alabama.....        | 1,564                             | 903         | 1,270       | 1,556       | 1,808       | 1,861       | 857         | 676         | 1,166       | 817         | 583               |
| Mississippi.....    | 1,134                             | 605         | 674         | 990         | 710         | 1,249       | 1,689       | 931         | 1,148       | 718         | 796               |
| Louisiana.....      | 456                               | 193         | 644         | 331         | 592         | 592         | 549         | 265         | 616         | 485         | 286               |
| Texas.....          | 1,956                             | 7,281       | 4,048       | 6,093       | 5,546       | 7,242       | 7,905       | 5,347       | 8,916       | 5,225       | 2,997             |
| Colorado.....       | 3,174                             | 1,473       | 1,432       | 1,274       | 683         | 1,162       | 810         | 1,164       | 602         | 464         | 497               |
| Washington.....     | 155                               | 52          | 103         | 154         | 139         | 82          | 168         | 85          | 108         | 40          | 181               |
| Oregon.....         | 9                                 | 86          | 170         | 47          | 47          | 78          | 43          | 27          | 78          | ---         | 300               |
| California.....     | 684                               | 364         | 650         | 663         | 360         | 795         | 512         | 837         | 243         | 836         | 599               |
| Other States.....   | 441                               | 401         | 620         | 693         | 646         | 801         | 827         | 1,007       | 627         | 325         | 415               |
| Total.....          | 37,488                            | 42,081      | 39,024      | 40,378      | 39,331      | 38,727      | 44,131      | 38,204      | 37,900      | 29,142      | 22,921            |

<sup>1</sup> Crop-movement season covers 17 months, from December through the second following April; i. e., the 1923 season begins December 1922 and ends April 1924. Figures for certain States include shipments for month preceding or following the regular crop-movement season.

<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

TABLE 188.—*Cantaloupes: <sup>1</sup> Car-lot shipments, by State of origin, 1923-34*

| State               | Crop-movement season <sup>2</sup> |             |             |             |             |             |             |             |             |             |                   |
|---------------------|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|
|                     | 1923                              | 1924        | 1925        | 1926        | 1927        | 1928        | 1929        | 1930        | 1931        | 1932        | 1933 <sup>3</sup> |
|                     | <i>Cars</i>                       | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i>       |
| Indiana.....        | 681                               | 822         | 1,089       | 629         | 415         | 465         | 389         | 184         | 278         | 239         | 136               |
| Michigan.....       | 306                               | 114         | 146         | 84          | 77          | 52          | 16          | 13          | 16          | 13          | 29                |
| Delaware.....       | 818                               | 511         | 667         | 551         | 427         | 427         | 285         | 193         | 233         | 190         | 172               |
| Maryland.....       | 1,270                             | 699         | 1,118       | 1,283       | 1,159       | 1,002       | 561         | 274         | 347         | 264         | 116               |
| North Carolina..... | 620                               | 401         | 655         | 401         | 606         | 304         | 88          | 19          | 110         | 180         | 178               |
| South Carolina..... | 70                                | 116         | 33          | 173         | 179         | 94          | 44          | 125         | 89          | 224         | 319               |
| Georgia.....        | 217                               | 586         | 117         | 136         | 108         | 104         | 76          | 138         | 83          | 83          | 120               |
| Arkansas.....       | 337                               | 1,052       | 1,245       | 1,127       | 788         | 854         | 413         | 245         | 443         | 541         | 119               |
| Texas.....          | 387                               | 456         | 498         | 514         | 242         | 244         | 176         | 358         | 758         | 583         | 399               |
| Colorado.....       | 2,806                             | 3,229       | 3,837       | 5,108       | 3,980       | 2,789       | 4,664       | 4,088       | 2,790       | 2,555       | 2,520             |
| New Mexico.....     | 364                               | 518         | 574         | 640         | 415         | 370         | 352         | 416         | 612         | 560         | 284               |
| Arizona.....        | 1,208                             | 2,145       | 3,853       | 3,712       | 5,217       | 5,901       | 5,457       | 5,834       | 4,542       | 3,109       | 1,922             |
| Washington.....     | 207                               | 298         | 221         | 145         | 252         | 258         | 382         | 282         | 160         | 105         | 36                |
| California.....     | 16,486                            | 19,930      | 18,707      | 18,320      | 22,406      | 25,307      | 26,850      | 23,626      | 25,707      | 17,269      | 12,602            |
| Other States.....   | 646                               | 617         | 1,091       | 601         | 486         | 523         | 289         | 384         | 424         | 407         | 252               |
| Total.....          | 25,928                            | 31,494      | 33,819      | 33,424      | 36,757      | 38,694      | 40,042      | 36,179      | 36,582      | 26,322      | 19,154            |

<sup>1</sup> Includes Honey Ball, Honey Dew, Casaba, and Persian melons. Melons other than cantaloupes were not reported separately until 1923. Shipments are as follows: 1923, 1,152 cars; 1924, 2,555 cars; 1925, 3,654 cars; 1926, 6,484 cars; 1927, 6,516 cars; 1928, 9,719 cars; 1929, 11,894 cars; 1930, 12,352 cars; 1931, 12,207 cars; 1932, 9,107 cars; 1933, 6,605 cars; and 1934, 6,976 cars.

<sup>2</sup> Crop-movement season extends from April through November of a given year. Figures for California include shipments in December, following the regular crop-movement season.

<sup>3</sup> Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

TABLE 189.—*Cantaloupes,<sup>1</sup> commercial crop: Acreage, production, and season average price per crate received by producers, by States; average 1928-32, annual 1933 and 1934*

| Group and State           | Acreage         |              |              | Production                      |                                 |                                 | Price for crop of— |                |                |
|---------------------------|-----------------|--------------|--------------|---------------------------------|---------------------------------|---------------------------------|--------------------|----------------|----------------|
|                           | Average 1928-32 | 1933         | 1934         | Average 1928-32                 | 1933                            | 1934                            | Average 1928-32    | 1933           | 1934           |
|                           | <i>Acres</i>    | <i>Acres</i> | <i>Acres</i> | <i>1,000 crates<sup>2</sup></i> | <i>1,000 crates<sup>2</sup></i> | <i>1,000 crates<sup>2</sup></i> | <i>Dollars</i>     | <i>Dollars</i> | <i>Dollars</i> |
| Early:                    |                 |              |              |                                 |                                 |                                 |                    |                |                |
| California, Imperial..... | 44,020          | 35,540       | 27,900       | <sup>3</sup> 6,588              | <sup>3</sup> 4,052              | 4,464                           | 1.37               | 1.16           | 1.41           |
| Florida.....              | 510             | 400          | 300          | 25                              | 24                              | 18                              | 1.65               | 1.00           | 1.30           |
| Texas.....                | 570             |              |              | 35                              |                                 |                                 | 1.65               |                |                |
| Total.....                | 45,100          | 35,940       | 28,200       | <sup>3</sup> 6,669              | <sup>3</sup> 4,076              | 4,482                           | 1.37               | 1.16           | 1.41           |
| Second early:             |                 |              |              |                                 |                                 |                                 |                    |                |                |
| Arizona.....              | 12,900          | 8,100        | 5,700        | <sup>3</sup> 1,863              | <sup>3</sup> 1,134              | 855                             | .95                | .40            | 1.30           |
| Arkansas.....             | 3,280           | 2,500        | 2,550        | 231                             | 112                             | 120                             | .89                | .75            | .90            |
| California, other.....    | 15,050          | 10,000       | 9,750        | <sup>3</sup> 2,726              | 1,540                           | 1,736                           | .90                | .75            | .87            |
| Georgia.....              | 780             | 1,200        | 2,400        | 62                              | 102                             | 120                             | 1.15               | .80            | 1.00           |
| Nevada.....               | 180             | 100          | 150          | 24                              | 9                               | 14                              | 1.04               | .75            | 1.35           |
| North Carolina.....       | 1,530           | 2,800        | 3,600        | 133                             | 224                             | 216                             | .93                | .80            | .55            |
| Oklahoma.....             | 520             | 600          | 650          | 40                              | 45                              | 29                              | .89                | .70            | .80            |
| South Carolina.....       | 990             | 2,500        | 1,800        | 99                              | <sup>3</sup> 225                | 90                              | 1.00               | .45            | .60            |
| Texas, other.....         | 4,840           | 2,900        | 4,800        | <sup>3</sup> 329                | 218                             | 264                             | .76                | .75            | 1.00           |
| Total.....                | 40,070          | 30,700       | 31,400       | <sup>3</sup> 5,607              | <sup>3</sup> 3,609              | 3,444                           | .91                | .66            | .97            |
| Intermediate:             |                 |              |              |                                 |                                 |                                 |                    |                |                |
| Delaware.....             | 2,360           | 3,000        | 3,090        | 256                             | 360                             | 433                             | 1.01               | .75            | .90            |
| Illinois.....             | 960             | 1,200        | 1,100        | 86                              | 108                             | 77                              | 1.29               | .40            | .50            |
| Indiana.....              | 4,490           | 5,300        | 5,800        | 425                             | 450                             | 609                             | 1.27               | .65            | .85            |
| Maryland.....             | 7,100           | 7,700        | 7,400        | 631                             | 847                             | 962                             | 1.16               | .50            | .90            |
| New Mexico.....           | 2,050           | 2,000        | 1,300        | <sup>3</sup> 255                | <sup>3</sup> 220                | 143                             | 1.11               | .35            | 1.40           |
| Tennessee.....            | 240             | 240          | 300          | 18                              | 18                              | 21                              | 1.28               | .75            | .90            |
| Washington.....           | 1,760           | 1,650        | 2,000        | 218                             | 223                             | 250                             | .78                | .45            | .85            |
| Total.....                | 18,960          | 21,090       | 20,990       | <sup>3</sup> 1,892              | <sup>3</sup> 2,226              | 2,495                           | 1.12               | .55            | .90            |
| Late:                     |                 |              |              |                                 |                                 |                                 |                    |                |                |
| Colorado.....             | 9,090           | 8,820        | 3,050        | 1,588                           | 1,499                           | 336                             | .90                | .55            | .90            |
| Iowa.....                 | 980             | 1,100        | 700          | 60                              | 88                              | 47                              | 1.10               | .60            | 1.20           |
| Kansas.....               | 450             | 450          | 200          | 51                              | 47                              | 12                              | .85                | .55            | .80            |
| Michigan.....             | 3,680           | 4,600        | 4,830        | 387                             | 506                             | 435                             | 1.32               | .85            | 1.15           |
| Nevada.....               | 270             | 60           | 40           | 35                              | 4                               | 3                               | 1.24               | .95            | .87            |
| New Jersey.....           | 3,520           | 4,750        | 5,000        | 438                             | 499                             | 340                             | 1.02               | .90            | 1.20           |
| Ohio.....                 | 4,460           | 700          | 800          | 449                             | 63                              | 80                              | 4.37               | 1.10           | 1.30           |
| Oregon.....               | 4,680           | 600          | 600          | 400                             | 108                             | 84                              | 4.90               | .55            | 1.00           |
| Utah.....                 | 4,480           | 250          | 350          | 448                             | 34                              | 57                              | 4.48               | .55            | .95            |
| Total.....                | 18,790          | 21,320       | 15,570       | 2,695                           | 2,848                           | 1,394                           | .98                | .68            | 1.09           |
| Grand total.....          | 122,920         | 109,050      | 96,160       | <sup>3</sup> 16,763             | <sup>3</sup> 12,759             | 11,815                          | 1.13               | .80            | 1.13           |

<sup>1</sup> Includes Honey Ball, Honey Dew, Casaba, and Persian melons not separately reported.<sup>2</sup> Standard crates (45's) containing approximately 60 pounds.<sup>3</sup> Includes some quantities not harvested on account of market conditions: Arizona, 360,000 crates in 1932 and 414,000 in 1933; California, Imperial, 1,693,000 crates in 1932 and 357,000 in 1933 and other, 768,000 crates in 1932; Texas, other, 433,000 crates in 1931 and 182,000 in 1932; New Mexico, 109,000 crates in 1932 and 55,000 in 1933; South Carolina, 37,000 crates in 1933. Price refers to harvested portion of crop.<sup>4</sup> Short-time average.

Bureau of Agricultural Economics; estimates based on returns from crop reporters.

TABLE 190.—*Carrots, commercial crop for market:<sup>1</sup> Acreage, production, and season average price per bushel received by producers, average 1928-32 annual 1933 and 1934*

| Marketing season        | Acreage         |              |              | Production                       |                                  |                                  | Price for crop of— |                |                |
|-------------------------|-----------------|--------------|--------------|----------------------------------|----------------------------------|----------------------------------|--------------------|----------------|----------------|
|                         | Average 1928-32 | 1933         | 1934         | Average 1928-32                  | 1933                             | 1934                             | Average 1928-32    | 1933           | 1934           |
|                         | <i>Acres</i>    | <i>Acres</i> | <i>Acres</i> | <i>1,000 bushels<sup>2</sup></i> | <i>1,000 bushels<sup>2</sup></i> | <i>1,000 bushels<sup>2</sup></i> | <i>Dollars</i>     | <i>Dollars</i> | <i>Dollars</i> |
| Fall.....               | 3,280           | 5,030        | 5,800        | 1,831                            | 2,485                            | 2,842                            | 0.69               | 0.54           | 0.59           |
| Early.....              | 8,470           | 11,300       | 10,770       | <sup>3</sup> 1,840               | 1,573                            | 1,363                            | .44                | .18            | .22            |
| Second early.....       | 8,550           | 8,770        | 11,030       | <sup>3</sup> 3,432               | 3,637                            | 5,223                            | .64                | .58            | .54            |
| Intermediate.....       | 1,880           | 1,650        | 1,950        | <sup>3</sup> 488                 | 458                              | 668                              | .83                | .72            | .50            |
| Late <sup>4</sup> ..... | 5,400           | 5,840        | 6,330        | <sup>3</sup> 2,536               | 2,482                            | 2,909                            | .53                | .39            | .44            |
| Total.....              | 27,580          | 32,590       | 35,880       | <sup>3</sup> 10,127              | 10,635                           | 13,005                           | .59                | .47            | .50            |

<sup>1</sup> Including undetermined quantities used for canning in some States.<sup>2</sup> Bushels containing approximately 50 pounds.<sup>3</sup> Includes some quantities not harvested on account of market conditions: 300,000 bushels in 1929; 44,000 in 1930; 1,634,000 in 1931; and 375,000 in 1932. Price refers to harvested portion of crop.<sup>4</sup> A average price for late States is computed only to Dec. 1.

Bureau of Agricultural Economics; estimates based on returns from crop reporters.

TABLE 191.—*Carrots: Car-lot shipments, by State of origin, 1928-33*

| State             | Crop-movement season <sup>1</sup> |             |             |             |             |             |             |             |             |             |             |  |
|-------------------|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--|
|                   | 1923                              | 1924        | 1925        | 1926        | 1927        | 1928        | 1929        | 1930        | 1931        | 1932        | 1933 *      |  |
|                   | <i>Cars</i>                       | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> |  |
| New York.....     | 1,410                             | 2,262       | 1,825       | 1,845       | 2,430       | 1,484       | 2,111       | 2,188       | 1,882       | 1,537       | 1,427       |  |
| Illinois.....     | 24                                | 3           | 23          | 2           | 13          | 96          | 33          | 37          | 38          | 14          | 5           |  |
| Michigan.....     | 35                                | 55          | 54          | 77          | 91          | 208         | 204         | 141         | 319         | 92          | 153         |  |
| Minnesota.....    | 8                                 | 5           | 59          | 84          | 80          | 59          | 123         | 62          | 18          | 32          | 70          |  |
| Virginia.....     | 2                                 | 1           | 40          | 10          | 44          | 137         | 110         | 67          | 47          | 6           | 2           |  |
| Mississippi.....  | 142                               | 266         | 197         | 209         | 496         | 230         | 108         | 28          | 12          | 7           | 5           |  |
| Louisiana.....    | 58                                | 32          | 106         | 70          | 177         | 99          | 71          | 84          | 41          | 17          | 10          |  |
| Texas.....        | 65                                | 282         | 575         | 1,136       | 903         | 1,685       | 2,860       | 2,145       | 1,181       | 1,492       | 1,110       |  |
| Colorado.....     | 12                                | 26          | 29          | 62          | 10          | 216         | 96          | 43          | 44          | 3           | 49          |  |
| Arizona.....      |                                   |             |             | 11          | 11          | 9           | 108         | 157         | 254         | 310         | 306         |  |
| Washington.....   | 21                                | 11          | 8           | 30          | 10          | 96          | 23          | 14          | 88          | 42          | 60          |  |
| California.....   | 24                                | 157         | 278         | 557         | 2,363       | 2,938       | 6,095       | 7,206       | 7,403       | 6,317       | 6,332       |  |
| Other States..... | 178                               | 214         | 233         | 211         | 225         | 198         | 207         | 220         | 187         | 96          | 42          |  |
| Total.....        | 1,979                             | 3,314       | 3,427       | 4,304       | 6,853       | 7,455       | 12,149      | 12,392      | 11,514      | 9,965       | 9,571       |  |

<sup>1</sup> Crop-movement season covers 21 months, beginning in October of the previous year in such early shipping States as California, Louisiana, and Texas, and extending through June of the following year, i. e., the 1923 season begins in October 1922, and ends in June 1924, in order to include shipments from storage in Northern States and to have season comparable with acreage and production.

<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

TABLE 192.—*Cauliflower, commercial crop: Acreage, production, and season average price per crate received by producers, average 1928-32, annual 1933 and 1934*

| Marketing season     | Acreage            |              |              | Production                          |                                     |                                     | Price for crop of— |                |                |
|----------------------|--------------------|--------------|--------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------|----------------|----------------|
|                      | Average<br>1928-32 | 1933         | 1934         | Average<br>1928-32                  | 1933                                | 1934                                | Average<br>1928-32 | 1933           | 1934           |
|                      | <i>Acres</i>       | <i>Acres</i> | <i>Acres</i> | <i>1,000<br/>Crates<sup>1</sup></i> | <i>1,000<br/>Crates<sup>1</sup></i> | <i>1,000<br/>Crates<sup>1</sup></i> | <i>Dollars</i>     | <i>Dollars</i> | <i>Dollars</i> |
| Fall and winter..... | 7,990              | 11,000       | 11,130       | 2,261                               | 2,570                               | 2,696                               | 0.74               | 0.57           | 0.48           |
| Early.....           | 8,630              | 7,250        | 6,540        | 2,235                               | 1,870                               | 1,455                               | .80                | .52            | .58            |
| Late.....            | 10,830             | 11,900       | 10,880       | 2,126                               | 2,434                               | 2,598                               | .90                | .72            | .72            |
| Total.....           | 27,450             | 30,150       | 28,550       | 6,618                               | 7,000                               | 6,621                               | .81                | .61            | .60            |

<sup>1</sup> Crates containing approximately 39 pounds ( $1\frac{1}{4}$  bushels).

<sup>2</sup> Includes some quantities not harvested on account of market conditions: 176,000 crates in 1932 and 100,000 in 1933. Price refers to harvested portion of crop.

Bureau of Agricultural Economics; estimates based on returns from crop reporters.

TABLE 193.—*Celery, commercial crop: Acreage, production, and season average price per crate received by producers, average 1928-32, annual 1933 and 1934*

| Marketing season                 | Acreage            |              |              | Production                          |                                     |                                     | Price for crop of— |                |                |
|----------------------------------|--------------------|--------------|--------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------|----------------|----------------|
|                                  | Average<br>1928-32 | 1933         | 1934         | Average<br>1928-32                  | 1933                                | 1934                                | Average<br>1928-32 | 1933           | 1934           |
|                                  | <i>Acres</i>       | <i>Acres</i> | <i>Acres</i> | <i>1,000<br/>Crates<sup>1</sup></i> | <i>1,000<br/>Crates<sup>1</sup></i> | <i>1,000<br/>Crates<sup>1</sup></i> | <i>Dollars</i>     | <i>Dollars</i> | <i>Dollars</i> |
| Fall and winter.....             | 7,180              | 3,500        | 5,800        | 1,240                               | 693                                 | 1,114                               | 1.18               | 1.19           | 1.10           |
| Early.....                       | 7,620              | 8,830        | 7,850        | 2,716                               | 2,621                               | 2,501                               | 2.18               | 1.15           | 1.46           |
| Second early.....                | 1,000              | 1,500        | 1,200        | 590                                 | 644                                 | 335                                 | 1.66               | 1.98           | 1.93           |
| Intermediate.....                | 3,710              | 3,780        | 3,920        | 1,014                               | 902                                 | 951                                 | 1.62               | 1.07           | 1.32           |
| Late (sec. 1) <sup>2</sup> ..... | 11,650             | 12,100       | 11,940       | 3,348                               | 3,345                               | 3,220                               | 1.27               | 1.28           | .95            |
| Late (sec. 2) <sup>2</sup> ..... | 1,460              | 1,540        | 1,490        | 443                                 | 419                                 | 496                                 | 1.35               | 1.32           | 1.25           |
| Total.....                       | 32,620             | 31,250       | 32,200       | 9,351                               | 8,624                               | 8,617                               | 1.58               | 1.27           | 1.21           |

<sup>1</sup> Two-thirds size (New York) crates, containing approximately 90 pounds.

<sup>2</sup> Includes some quantities not harvested on account of market conditions: 249,000 crates in 1932, and 197,000 in 1933. Price refers to harvested portion of crop.

<sup>3</sup> Average price for late States computed only to Dec. 1.

Bureau of Agricultural Economics; estimates based on returns from crop reporters.

TABLE 194.—*Celery: Car-lot shipments, by State of origin, 1923-33*

| State             | Crop-movement season <sup>1</sup> |             |             |             |             |             |             |             |             |             |                   |
|-------------------|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|
|                   | 1923                              | 1924        | 1925        | 1926        | 1927        | 1928        | 1929        | 1930        | 1931        | 1932        | 1933 <sup>2</sup> |
|                   | <i>Cars</i>                       | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i>       |
| New York.....     | 3, 742                            | 4, 529      | 4, 492      | 4, 898      | 5, 893      | 4, 192      | 3, 847      | 5, 451      | 3, 875      | 4, 688      | 2, 529            |
| New Jersey.....   | 219                               | 177         | 149         | 133         | 106         | 32          | 53          | 32          | 25          | 32          | 26                |
| Pennsylvania..... | 223                               | 225         | 208         | 194         | 169         | 71          | 105         | 81          | 61          | 36          | 15                |
| Michigan.....     | 1, 488                            | 1, 352      | 2, 224      | 1, 930      | 1, 997      | 2, 139      | 1, 852      | 1, 606      | 1, 904      | 861         | 877               |
| Florida.....      | 6, 398                            | 7, 219      | 7, 952      | 5, 504      | 7, 499      | 8, 413      | 8, 831      | 9, 838      | 8, 245      | 7, 931      | 6, 987            |
| Idaho.....        | 49                                | 48          | 29          | 46          | 121         | 121         | 232         | 227         | 97          | 80          | 63                |
| Colorado.....     | 125                               | 197         | 399         | 211         | 161         | 138         | 149         | 136         | 53          | 80          | 39                |
| Oregon.....       | 205                               | 363         | 398         | 511         | 625         | 605         | 673         | 647         | 622         | 412         | 421               |
| California.....   | 4, 419                            | 4, 748      | 4, 554      | 6, 226      | 7, 696      | 8, 384      | 9, 580      | 8, 450      | 8, 358      | 7, 934      | 5, 922            |
| Other States..... | 82                                | 99          | 109         | 80          | 125         | 135         | 138         | 69          | 100         | 82          | 93                |
| Total.....        | 10, 948                           | 18, 937     | 20, 514     | 19, 661     | 24, 317     | 24, 280     | 25, 490     | 26, 627     | 22, 740     | 22, 055     | 16, 972           |

<sup>1</sup> Crop-movement season covers 20 months, from September through the second following April; i. e., the 1923 season begins September 1922, and ends April 1924.

<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

TABLE 195.—*Cherries: Production in 12 States <sup>1</sup> and average price per ton received by producers, average 1927-31, and annual 1933 and 1934*

| State             | Production           |                   |                   | Price for crop of— |                   | State           | Production           |                       |                   | Price for crop of— |                   |
|-------------------|----------------------|-------------------|-------------------|--------------------|-------------------|-----------------|----------------------|-----------------------|-------------------|--------------------|-------------------|
|                   | Average, 1927-31     | 1933              | 1934 <sup>2</sup> | 1933               | 1934 <sup>2</sup> |                 | Average, 1927-31     | 1933                  | 1934 <sup>2</sup> | 1933               | 1934 <sup>2</sup> |
|                   | <i>Short tons</i>    | <i>Short tons</i> | <i>Short tons</i> | <i>Dollars</i>     | <i>Dollars</i>    |                 | <i>Short tons</i>    | <i>Short tons</i>     | <i>Short tons</i> | <i>Dollars</i>     | <i>Dollars</i>    |
| New York.....     | <sup>3</sup> 15, 354 | 10, 754           | 19, 220           | 60                 | 50                | Idaho.....      | 2, 740               | 3, 160                | 2, 982            | 50                 | 65                |
| Sweet.....        |                      | 1, 398            | 1, 160            |                    |                   | Colorado.....   | 3, 450               | 1, 976                | 5, 920            | 54                 | 45                |
| Sour.....         |                      | 9, 356            | 18, 060           |                    |                   | Utah.....       | 3, 500               | 3, 078                | 3, 850            | 65                 | 65                |
| Pennsylvania..... | <sup>4</sup> 6, 587  | 4, 375            | 6, 344            | 55                 | 40                | Washington..... | 11, 170              | 16, 330               | 13, 500           | 50                 | 75                |
| Ohio.....         | <sup>4</sup> 3, 073  | 2, 806            | 3, 660            | 55                 | 40                | Oregon.....     | 10, 368              | 15, 000               | 9, 620            | 50                 | 75                |
| Michigan.....     | 18, 262              | 27, 300           | 26, 560           | 55                 | 50                | California..... | <sup>3</sup> 17, 460 | <sup>2</sup> 24, 900  | 16, 700           | 66                 | 89                |
| Wisconsin.....    | 5, 840               | 7, 040            | 4, 400            | 50                 | 50                |                 |                      |                       |                   |                    |                   |
| Montana.....      | 470                  | 735               | 750               | 55                 | 70                | 12 States..     | <sup>3</sup> 94, 400 | <sup>3</sup> 117, 454 | 113, 506          | 56.22              | 60.38             |

<sup>1</sup> Estimates include only certain States where total production can be calculated from commercial sales (shipments, canning, cold pack, etc.) and differ from previously published commercial estimates for some States by an increased allowance for farm and local use.

<sup>2</sup> Preliminary.

<sup>3</sup> Includes some quantities not harvested on account of prices as follows: New York, 1931, 2, 550 tons; California, 1931, 3, 000 tons, 1933, 500 tons. Prices and value are computed on the harvested crop.

<sup>4</sup> 3-year average.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board. Estimates of production for 1929-33 revised on basis of 1930 census. Earlier years not so revised.

TABLE 196.—*Citrus fruit production and average price per box received by producers, by States, 1899, 1909, and 1919-34*<sup>1</sup>

| Year              | Oranges <sup>2</sup> |                      |                |                |                      |                |                |                |              |                            |              |              |              |              | Price per box <sup>3</sup> |              |  |  |  |  |  |
|-------------------|----------------------|----------------------|----------------|----------------|----------------------|----------------|----------------|----------------|--------------|----------------------------|--------------|--------------|--------------|--------------|----------------------------|--------------|--|--|--|--|--|
|                   | Total production     |                      |                |                |                      |                |                |                |              | Price per box <sup>3</sup> |              |              |              |              |                            |              |  |  |  |  |  |
|                   | California           | Florida <sup>4</sup> | Texas          | Arizona        | Alabama <sup>5</sup> | Louisiana      | Mississippi    | 7 States       | California   | Florida                    | Texas        | Arizona      | Alabama      | Louisiana    | Mississippi                | 7 States     |  |  |  |  |  |
|                   | 1,000<br>boxes       | 1,000<br>boxes       | 1,000<br>boxes | 1,000<br>boxes | 1,000<br>boxes       | 1,000<br>boxes | 1,000<br>boxes | 1,000<br>boxes | Dol-<br>lars | Dol-<br>lars               | Dol-<br>lars | Dol-<br>lars | Dol-<br>lars | Dol-<br>lars | Dol-<br>lars               | Dol-<br>lars |  |  |  |  |  |
| 1899 <sup>6</sup> | 5,882                | 273                  | 11             | 33             | (7)                  | 1              | 1              | 6,187          | 2.75         | 4.05                       |              |              |              |              |                            |              |  |  |  |  |  |
| 1909 <sup>6</sup> | 14,440               | 4,888                | 11             | 33             |                      | 152            | 15             | 19,530         | 2.75         | 4.05                       |              |              |              |              |                            |              |  |  |  |  |  |
| 1919              | 15,528               | 7,533                | 9              | 80             | 20                   | 37             | 31             | 23,238         | 2.18         | 2.48                       |              |              |              |              |                            |              |  |  |  |  |  |
| 1920              | 22,547               | 9,457                |                | 80             | 82                   | 42             | 25             | 32,213         | 2.80         | 3.65                       |              |              |              |              |                            |              |  |  |  |  |  |
| 1921              | 13,921               | 8,871                |                | 80             | 82                   | 50             | 30             | 32,034         | 2.80         | 3.65                       |              |              |              |              |                            |              |  |  |  |  |  |
| 1922              | 21,286               | 10,597               | 4              | 81             | 190                  | 60             | 45             | 32,563         | 2.00         | 1.85                       |              |              |              |              |                            |              |  |  |  |  |  |
| 1923              | 24,324               | 13,262               | 6              | 86             | 225                  | 75             | 55             | 38,033         | 2.00         | 1.80                       |              |              |              |              |                            |              |  |  |  |  |  |
| 1924              | 18,535               | 11,639               | 12             | 60             | 2                    | 75             |                | 30,323         | 3.55         | 3.18                       | 2.00         | 3.50         | 4.00         | 2.20         |                            | 3.40         |  |  |  |  |  |
| 1925              | 24,200               | 10,344               | 10             | 86             | 130                  | 100            | 27             | 34,897         | 2.84         | 3.03                       | 2.50         | 3.00         | 3.00         | 2.70         | 3.00                       | 2.90         |  |  |  |  |  |
| 1926              | 28,167               | 11,512               | 41             | 75             | 75                   | 150            | 42             | 40,062         | 3.05         | 2.41                       | 2.50         | 3.10         | 3.00         | 2.60         | 3.00                       | 2.86         |  |  |  |  |  |
| 1927              | 22,737               | 9,933                | 70             | 54             | 110                  | 200            | 50             | 33,154         | 4.00         | 3.60                       | 1.90         | 4.00         | 4.00         | 4.00         | 4.00                       | 3.88         |  |  |  |  |  |
| 1928              | 38,994               | 15,116               | 115            | 99             | 85                   | 220            | 30             | 54,659         | 2.05         | 1.83                       | 1.55         | 3.30         | 3.00         | 3.00         | 3.00                       | 3.58         |  |  |  |  |  |
| 1929              | 21,483               | 10,304               | 261            | 137            | 212                  | 187            | 37             | 32,621         | 3.90         | 2.92                       | 2.10         | 3.80         | 2.50         | 3.35         | 2.55                       | 3.00         |  |  |  |  |  |
| 1930              | 35,470               | 19,211               | 250            | 139            | 3                    | 195            | 2              | 55,270         | 1.50         | 1.90                       | 1.55         | 1.50         | 1.50         | 2.05         | 2.00                       | 1.64         |  |  |  |  |  |
| 1931              | 34,900               | 14,220               | 520            | 145            | 80                   | 245            | 54             | 50,164         | 1.10         | 1.90                       | 1.05         | 1.25         | 1.75         | 1.75         | 1.75                       | 1.33         |  |  |  |  |  |
| 1932              | 34,265               | 16,200               | 315            | 147            | 120                  | 241            | 80             | 51,368         | 1.00         | 1.28                       | 1.35         | .95          | 1.60         | 1.25         | 1.60                       | 1.09         |  |  |  |  |  |
| 1933              | 42,843               | 18,100               | 390            | 143            | 3                    | 212            | 28             | 47,289         | 1.66         | 1.51                       | 1.00         | 1.40         | 1.85         | 1.00         | 1.85                       | 1.59         |  |  |  |  |  |
| 1934 <sup>7</sup> | 41,565               | 15,500               | 595            | 170            | 140                  | 293            | 88             | 58,351         | 1.80         | 1.55                       | 1.05         | 1.50         | 1.15         | 1.25         | 1.30                       | 1.72         |  |  |  |  |  |

| Year              | Grapefruit           |                |                |                |                |                            |              |              |              |              | Lemons               |                                  | Limes                |                                  |
|-------------------|----------------------|----------------|----------------|----------------|----------------|----------------------------|--------------|--------------|--------------|--------------|----------------------|----------------------------------|----------------------|----------------------------------|
|                   | Total production     |                |                |                |                | Price per box <sup>3</sup> |              |              |              |              | Pro-<br>duc-<br>tion | Price<br>per<br>box <sup>3</sup> | Pro-<br>duc-<br>tion | Price<br>per<br>box <sup>3</sup> |
|                   | Florida <sup>4</sup> | California     | Texas          | Arizona        | 4 States       | Florida                    | California   | Texas        | Arizona      | 4 States     | California           | California                       | Florida              | Florida                          |
|                   | 1,000<br>boxes       | 1,000<br>boxes | 1,000<br>boxes | 1,000<br>boxes | 1,000<br>boxes | Dol-<br>lars               | Dol-<br>lars | Dol-<br>lars | Dol-<br>lars | Dol-<br>lars | 1,000<br>boxes       | Dol-<br>lars                     | 1,000<br>boxes       | Dol-<br>lars                     |
| 1899 <sup>6</sup> | 12                   | 18             |                | 1              | 1              | 1.31                       |              |              |              |              | 874                  |                                  |                      |                                  |
| 1909 <sup>6</sup> | 1,062                | 123            | (7)            | 1              | 1              | 1.18                       |              |              |              |              | 2,756                |                                  | 11                   |                                  |
| 1919              | 5,598                | 363            | 3              | 29             | 6,293          |                            |              |              |              |              | 3,499                | 2.00                             | 28                   | 3.45                             |
| 1920              | 6,142                | 395            |                | 34             | 6,571          |                            |              |              |              |              | 4,955                | 2.92                             | 26                   | 3.10                             |
| 1921              | 6,644                | 380            |                | 35             | 7,039          |                            |              |              |              |              | 4,050                | 3.45                             | 33                   | 2.75                             |
| 1922              | 7,766                | 394            | 35             | 60             | 8,255          |                            |              |              |              |              | 3,400                | 3.30                             | 35                   | 2.90                             |
| 1923              | 8,936                | 363            | 65             | 95             | 9,459          |                            |              |              |              |              | 6,732                | 1.60                             | 40                   | 3.00                             |
| 1924              | 8,780                | 387            | 211            | 105            | 9,463          | 1.61                       | 3.55         | 2.00         | 3.50         | 1.72         | 5,125                | 3.48                             | 36                   | 3.00                             |
| 1925              | 8,316                | 600            | 200            | 150            | 9,266          | 2.75                       | 2.84         | 2.50         | 3.00         | 2.75         | 7,316                | 2.11                             | 30                   | 4.00                             |
| 1926              | 8,693                | 672            | 361            | 120            | 9,846          | 1.94                       | 2.35         | 2.50         | 2.50         | 2.00         | 7,712                | 2.81                             | 12                   | 6.50                             |
| 1927              | 8,153                | 720            | 524            | 176            | 9,578          | 2.88                       | 3.80         | 1.90         | 3.80         | 2.91         | 6,000                | 3.80                             | 0                    |                                  |
| 1928              | 11,314               | 972            | 753            | 211            | 13,250         | 1.66                       | 2.50         | 1.60         | 3.50         | 1.74         | 7,900                | 2.60                             | 6                    | 4.50                             |
| 1929              | 8,274                | 1,000          | 1,530          | 365            | 11,169         | 2.44                       | 2.65         | 2.15         | 2.50         | 2.42         | 5,900                | 3.70                             | 8                    | 5.50                             |
| 1930              | 16,109               | 1,290          | 1,135          | 400            | 18,934         | 1.20                       | 1.25         | 1.15         | 1.50         | 1.21         | 7,950                | 2.35                             | 8                    | 5.00                             |
| 1931              | 10,786               | 1,431          | 2,480          | 450            | 15,147         | 1.19                       | 1.00         | .55          | .90          | 1.06         | 7,800                | 1.95                             | 9                    | 4.50                             |
| 1932              | 11,800               | 1,350          | 1,385          | 614            | 15,149         | .81                        | .85          | 1.10         | .75          | .84          | 6,704                | 2.10                             | 10                   | 4.00                             |
| 1933              | 10,700               | 1,713          | 1,130          | 700            | 14,243         | 1.17                       | 1.10         | .90          | .80          | 1.12         | 7,295                | 2.35                             | 8                    | 3.00                             |
| 1934 <sup>7</sup> | 12,500               | 1,788          | 2,720          | 1,240          | 18,248         | .91                        | 1.10         | .85          | .85          | .92          | 7,500                | 2.30                             | 8                    | 3.50                             |

<sup>1</sup> Estimates of production include fruit consumed on farms, sold locally, and used for manufacturing purposes, as well as that shipped. Fruit ripened on the trees but destroyed by freezing or storms prior to picking is not included. The estimates cover the crop produced from the bloom of the year shown. In California, where picking continues throughout the year, the estimates are for 12-month periods beginning Nov. 1. In other States the season begins about Sept. 1.

<sup>2</sup> Includes tangerines.

<sup>3</sup> Season average prices, 1919-33; season average price to Dec. 1, 1934. California prices are for naked fruit at the packing-house door; Florida prices are for packed boxes minus selling charges on the commercial crop so handled and bulk prices for other commercial and noncommercial marketings; Florida lime prices, 1919-23, are Dec. 1 prices.

<sup>4</sup> From prospects on Apr. 1, 1935, commercial shipments of Florida citrus fruits from the 1934 crop were estimated at 14,000,000 boxes of oranges and 7,500,000 boxes of grapefruit compared with 16,500,000 boxes of oranges and 7,500,000 boxes of grapefruit shipped from the 1933 crop. Commercial estimates and forecasts represent out-of-State shipment, whether by rail, boat, or auto truck.

<sup>5</sup> For years 1919-34, equivalent in standard boxes, each equal to about 2 of the "half straps" commonly used.

<sup>6</sup> Census. Size of boxes not specified.

<sup>7</sup> 500 boxes or less.

<sup>8</sup> Includes 977,000 boxes of oranges for charity which are excluded in computing value.

<sup>9</sup> As estimated from prospects on Apr. 1, 1935, except for lemons and limes which are based on Dec. 1 prospects.

Bureau of Agricultural Economics; production figures are estimates of the Crop Reporting Board, revised 1919-28. See introductory text.

TABLE 197.—*Citrus fruit: Car-lot shipments, by State of origin, 1923-24 to 1933-34*ORANGES <sup>1</sup>

| State            | Crop movement season <sup>1</sup> |             |             |             |             |             |             |             |             |             |                      |
|------------------|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------|
|                  | 1923-24                           | 1924-25     | 1925-26     | 1926-27     | 1927-28     | 1928-29     | 1929-30     | 1930-31     | 1931-32     | 1932-33     | 1933-34 <sup>2</sup> |
|                  | <i>Cars</i>                       | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i>          |
| California.....  | 44,905                            | 34,439      | 47,017      | 53,511      | 43,693      | 68,797      | 43,053      | 64,774      | 61,615      | 56,230      | 53,243               |
| Florida.....     | 33,431                            | 25,091      | 19,625      | 22,536      | 16,453      | 32,550      | 17,312      | 33,915      | 22,769      | 30,017      | 30,232               |
| Alabama.....     | 600                               | 2           | 338         | 179         | 312         | 97          | 485         | 2           | 175         | 227         | 1                    |
| Mississippi..... | 13                                | 2           | 8           | 4           | 15          | 5           | 25          | 1           | 40          | 48          | 1                    |
| Louisiana.....   | 3                                 | 2           | 1           | 1           | 251         | 264         | 278         | 155         | 84          | 85          | 45                   |
| Texas.....       | 3                                 | 3           | 6           | 9           | 26          | 33          | 156         | 119         | 200         | 102         | 64                   |
| Arizona.....     | 94                                | 45          | 96          | 73          | 33          | 66          | 90          | 90          | 66          | 106         | 126                  |
| Georgia.....     |                                   |             |             |             |             |             |             |             |             |             | 3                    |
| Total.....       | 79,049                            | 59,582      | 67,091      | 76,313      | 60,783      | 101,812     | 61,399      | 99,056      | 84,949      | 86,815      | 83,714               |

## GRAPEFRUIT

|                 |        |        |        |        |        |        |        |        |        |        |        |
|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Florida.....    | 19,614 | 20,087 | 14,269 | 17,304 | 14,166 | 21,844 | 13,955 | 26,081 | 17,661 | 17,320 | 14,920 |
| Texas.....      | 99     | 521    | 298    | 747    | 1,036  | 1,617  | 3,493  | 2,247  | 5,329  | 2,679  | 1,611  |
| California..... | 446    | 431    | 558    | 593    | 780    | 780    | 1,194  | 1,220  | 1,651  | 1,034  | 2,194  |
| Arizona.....    | 155    | 159    | 218    | 210    | 211    | 272    | 417    | 436    | 296    | 407    | 909    |
| Louisiana.....  |        |        |        |        |        |        | 1      | 2      |        |        |        |
| Total.....      | 20,314 | 21,198 | 15,343 | 18,654 | 16,193 | 24,513 | 19,060 | 29,986 | 24,937 | 21,449 | 19,643 |

## LEMONS

|                 |        |                |        |        |        |        |        |        |        |        |        |
|-----------------|--------|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| California..... | 13,388 | 11,680         | 13,981 | 13,520 | 12,745 | 17,181 | 13,564 | 18,377 | 15,710 | 14,702 | 16,974 |
| Texas.....      | 1      | 4 <sup>2</sup> |        |        |        |        |        |        |        |        |        |
| Arizona.....    | 2      | 1              | 1      |        |        |        | 2      | 1      | 2      | 2      | 1      |
| Total.....      | 13,391 | 11,683         | 13,982 | 13,529 | 12,745 | 17,181 | 13,566 | 18,378 | 15,712 | 14,704 | 16,975 |

## MIXED CITRUS

|                 |       |       |       |       |       |        |        |        |        |        |       |
|-----------------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|
| Florida.....    | 3,608 | 4,226 | 3,565 | 5,313 | 6,225 | 9,109  | 8,216  | 14,687 | 8,825  | 8,393  | 7,938 |
| California..... | 1,424 | 1,148 | 1,605 | 1,639 | 1,590 | 1,783  | 1,343  | 1,626  | 1,666  | 1,703  | 1,750 |
| Texas.....      | 1     | 18    |       | 22    | 92    | 185    | 501    | 288    | 520    | 275    | 124   |
| Arizona.....    |       | 10    | 1     | 10    | 11    | 24     | 48     | 29     | 16     | 1      | 16    |
| Louisiana.....  |       |       |       |       | 1     | 1      | 10     | 155    | 87     | 108    | 113   |
| Total.....      | 5,033 | 5,402 | 5,171 | 6,984 | 7,919 | 11,102 | 10,118 | 16,785 | 11,114 | 10,480 | 9,941 |

<sup>1</sup> Includes tangerines and satsumas.<sup>2</sup> Crop movement season extends as follows: California, from Nov. 1 through October of the following year; all other States from Sept. 1 through August of the following year, except lemons from Nov. 1 through October of the following year.<sup>3</sup> Preliminary.<sup>4</sup> Reported in October 1924.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

TABLE 198.—*Grapefruit, Florida: Weighted average auction price per box Chicago and New York, by months, 1925-26 to 1934-35*

| Market and year | Sept.  | Oct.   | Nov.   | Dec.   | Jan.   | Feb.   | Mar.   | Apr.   | May    | June   | July   | Aug.   | Average <sup>1</sup> |
|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------------------|
| Chicago:        |        |        |        |        |        |        |        |        |        |        |        |        |                      |
| 1930-31         | \$3.54 | \$3.21 | \$2.82 | \$2.56 | \$2.59 | \$2.45 | \$2.49 | \$2.53 | \$2.36 | \$2.08 | \$1.70 | -----  | \$2.60               |
| 1931-32         | 4.14   | 3.05   | 2.47   | 2.21   | 2.17   | 2.11   | 2.26   | 2.99   | 3.70   | 3.54   | -----  | -----  | 2.63                 |
| 1932-33         | 4.83   | 3.56   | 2.92   | 2.43   | 2.37   | 2.37   | 2.30   | 2.03   | 1.99   | 2.12   | 1.71   | \$1.79 | 2.31                 |
| 1933-34         | 2.90   | 2.60   | 2.40   | 2.41   | 2.23   | 2.31   | 2.54   | 2.78   | 2.65   | 2.81   | 2.03   | -----  | 2.52                 |
| 1934-35         | 3.01   | 2.40   | 2.29   | 1.93   | -----  | -----  | -----  | -----  | -----  | -----  | -----  | -----  | -----                |
| New York:       |        |        |        |        |        |        |        |        |        |        |        |        |                      |
| 1925-26         | -----  | 4.96   | 3.97   | 3.95   | 4.01   | 4.03   | 4.61   | 5.16   | 4.70   | 4.74   | 5.51   | -----  | 4.38                 |
| 1926-27         | -----  | 5.35   | 4.07   | 3.40   | 3.53   | 3.75   | 3.67   | 3.69   | 3.66   | 3.80   | 2.44   | -----  | 3.66                 |
| 1927-28         | -----  | 4.60   | 4.70   | 4.71   | 4.82   | 5.07   | 5.52   | 5.45   | 4.92   | 3.93   | 6.28   | 4.51   | 4.93                 |
| 1928-29         | -----  | 4.41   | 4.25   | 3.44   | 3.52   | 3.20   | 3.30   | 3.82   | 3.83   | 4.71   | 6.36   | -----  | 3.70                 |
| 1929-30         | 5.80   | 4.51   | 4.23   | 4.26   | 4.43   | 4.09   | 4.78   | 5.09   | 4.25   | 3.24   | 3.10   | -----  | 4.42                 |
| 1930-31         | 4.03   | 3.64   | 3.00   | 2.82   | 2.56   | 2.43   | 2.50   | 2.76   | 2.67   | 2.06   | 1.17   | -----  | 2.69                 |
| 1931-32         | 4.32   | 3.09   | 2.60   | 2.26   | 2.14   | 1.97   | 2.23   | 2.76   | 3.44   | 3.76   | 3.12   | -----  | 2.53                 |
| 1932-33         | 3.61   | 3.65   | 3.01   | 2.28   | 2.24   | 2.04   | 1.83   | 1.72   | 1.71   | 1.54   | 1.55   | 1.92   | 2.04                 |
| 1933-34         | 3.12   | 2.62   | 2.24   | 2.33   | 2.20   | 2.23   | 2.46   | 2.60   | 2.49   | 3.05   | 4.32   | -----  | 2.41                 |
| 1934-35         | 3.09   | 2.15   | 2.11   | 1.94   | -----  | -----  | -----  | -----  | -----  | -----  | -----  | -----  | -----                |

<sup>1</sup> Where months are missing, average is for months shown.<sup>2</sup> Includes an average in September 1933 of \$2.

## Bureau of Agricultural Economics.

Compiled as follows: Chicago, Chicago Fruit and Vegetable Reporter. New York, reports of California Fruit Growers Exchange. Prices weighted by number of boxes sold. These prices are a new series and are not comparable with those published in Yearbooks prior to 1930.

TABLE 199.—*Grapefruit: Fresh fruit produced and quantity canned in Florida, and receipts of canned grapefruit from Puerto Rico, 1921-22 to 1933-34*

| Season  | Florida pack, canned fruit |                    |                    | Total Florida production, fresh fruit | United States receipts of canned fruit from Puerto Rico <sup>1</sup> |                               |                  |                               |
|---------|----------------------------|--------------------|--------------------|---------------------------------------|--|-------------------------------|------------------|-------------------------------|
|         | Grapefruit hearts          | Grapefruit juice   | Total pack         |                                       | Grapefruit hearts  |                               | Grapefruit juice |                               |
|         | Cases <sup>2</sup>         | Cases <sup>2</sup> | Cases <sup>2</sup> |                                       | Pounds   | Equivalent cases <sup>2</sup> | Gallons          | Equivalent cases <sup>2</sup> |
| 1921-22 | 10,000                     | -----              | 10,000             | 6,644,000                             | -----  | -----                         | -----            | -----                         |
| 1922-23 | 150,000                    | -----              | 150,000            | 7,763,000                             | -----  | -----                         | -----            | -----                         |
| 1923-24 | 200,000                    | -----              | 200,000            | 8,936,000                             | 3,861,655  | 128,713                       | -----            | -----                         |
| 1924-25 | 350,000                    | -----              | 350,000            | 8,760,000                             | 3,840,819  | 128,027                       | -----            | -----                         |
| 1925-26 | 400,000                    | -----              | 400,000            | 8,316,000                             | 6,348,020  | 211,601                       | -----            | -----                         |
| 1926-27 | 700,000                    | -----              | 700,000            | 8,693,000                             | 9,262,394  | 308,746                       | -----            | -----                         |
| 1927-28 | 600,000                    | -----              | 600,000            | 8,158,000                             | 10,733,709   | 357,790                       | -----            | -----                         |
| 1928-29 | 957,000                    | 205,000            | 1,162,000          | 11,314,000                            | 2,832,310  | 94,410                        | -----            | -----                         |
| 1929-30 | 1,816,738                  | 173,934            | 1,490,672          | 8,274,000                             | 12,415,247   | 413,842                       | -----            | -----                         |
| 1930-31 | 2,712,489                  | 412,066            | 3,124,555          | 16,109,000                            | 5,931,578  | 197,719                       | 15,574           | 4,615                         |
| 1931-32 | 907,323                    | 247,652            | 1,154,975          | 10,788,000                            | 4,483,485  | 149,450                       | 3,945            | 1,170                         |
| 1932-33 | 2,161,975                  | 725,967            | 2,887,942          | 11,800,000                            | 1,289,574  | 42,986                        | 9,194            | 2,724                         |
| 1933-34 | 2,184,577                  | 610,115            | 2,794,692          | 10,700,000                            | 4,410,944  | 147,031                       | 15,055           | 4,461                         |

<sup>1</sup> Year beginning July; reports of Bureau of Foreign and Domestic Commerce.<sup>2</sup> Cases on basis of 24 No. 2 cans.

## Bureau of Agricultural Economics.

Figures on the Florida pack of canned grapefruit were obtained as follows: 1921-22 to 1927-28, averages of various trade estimates; 1928-29, estimated by the Florida Grapefruit Cannery Association; 1929-30 to 1933-34, complete surveys made by the Bureau of Foreign and Domestic Commerce. A box of fresh fruit in Florida is estimated to pack slightly more than a case of canned fruit.

Some grapefruit also is canned in Texas, Arizona, and California. In 1932-33 Arizona packed 700 cases of grapefruit hearts and 3,200 cases of juice. In 1933-34 the Arizona pack was 570 cases of hearts and 5,900 cases of juice, besides 68,000 gallons of juice in barrels, equivalent to 20,000 cases of 24 No. 2 cans.

Considerable quantities are exported from the United States; domestic exports for the fiscal year 1933-34 were 31,888,086 pounds or the equivalent of 1,063,270 cases. Puerto Rico also ships to foreign countries.

TABLE 200.—*Lemons, California: Weighted average auction price per box, Chicago and New York, by months, 1925-26 to 1934-35*

| Market and year  | Nov.   | Dec.   | Jan.   | Feb.   | Mar.   | Apr.   | May    | June   | July   | Aug.   | Sept.  | Oct.   | Average |
|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| <b>Chicago:</b>  |        |        |        |        |        |        |        |        |        |        |        |        |         |
| 1930-31.....     | \$4.52 | \$4.44 | \$5.00 | \$4.00 | \$4.29 | \$3.75 | \$4.00 | \$6.83 | \$6.37 | \$6.71 | \$7.75 | \$6.03 | \$5.64  |
| 1931-32.....     | 3.84   | 4.00   | 3.95   | 4.03   | 3.91   | 3.33   | 4.57   | 4.53   | 5.86   | 6.68   | 8.45   | 8.74   | 5.11    |
| 1932-33.....     | 5.31   | 5.00   | 4.71   | 3.92   | 4.30   | 4.00   | 4.97   | 5.79   | 4.24   | 4.14   | 4.62   | 4.78   | 4.81    |
| 1933-34.....     | 4.10   | 4.84   | 4.72   | 4.35   | 4.60   | 4.03   | 5.04   | 5.62   | 5.86   | 4.72   | 4.09   | 4.85   | 4.99    |
| 1934-35.....     | 4.45   | 4.03   |        |        |        |        |        |        |        |        |        |        |         |
| <b>New York:</b> |        |        |        |        |        |        |        |        |        |        |        |        |         |
| 1925-26.....     | 4.13   | 4.46   | 3.91   | 4.16   | 5.40   | 4.12   | 4.83   | 3.79   | 4.83   | 4.38   | 3.56   | 4.50   | 4.35    |
| 1926-27.....     | 3.82   | 4.03   | 4.20   | 3.43   | 3.90   | 3.50   | 3.89   | 4.50   | 6.44   | 6.37   | 8.82   | 9.27   | 4.64    |
| 1927-28.....     | 6.92   | 6.13   | 6.33   | 6.03   | 5.19   | 5.54   | 6.42   | 6.04   | 6.97   | 6.11   | 5.59   | 5.19   | 6.07    |
| 1928-29.....     | 4.90   | 5.62   | 5.26   | 3.95   | 4.07   | 4.55   | 3.82   | 6.89   | 5.39   | 7.82   | 11.87  | 11.22  | 5.82    |
| 1929-30.....     | 8.70   | 8.63   | 5.68   | 5.06   | 4.81   | 5.51   | 7.24   | 6.15   | 7.26   | 7.93   | 5.36   | 4.23   | 6.42    |
| 1930-31.....     | 4.18   | 4.52   | 4.89   | 4.08   | 4.47   | 4.06   | 4.43   | 5.05   | 6.57   | 6.55   | 7.28   | 5.66   | 5.30    |
| 1931-32.....     | 3.98   | 4.04   | 3.87   | 3.81   | 3.80   | 3.27   | 4.96   | 4.47   | 5.16   | 7.03   | 8.56   | 8.48   | 5.09    |
| 1932-33.....     | 5.40   | 5.12   | 4.80   | 3.47   | 3.89   | 3.99   | 4.95   | 5.81   | 4.35   | 4.36   | 4.40   | 4.86   | 4.71    |
| 1933-34.....     | 3.95   | 4.24   | 4.73   | 4.35   | 4.60   | 4.19   | 4.89   | 5.71   | 5.47   | 4.82   | 3.84   | 4.35   | 4.75    |
| 1934-35.....     | 4.37   | 3.97   |        |        |        |        |        |        |        |        |        |        |         |

Bureau of Agricultural Economics.

Compiled as follows: Chicago, Chicago Fruit and Vegetable Reporter. New York, reports of California Fruit Growers Exchange. Prices weighted by number of boxes sold. These prices are a new series and are not comparable with those published in Yearbooks prior to 1930.

TABLE 201.—*Oranges, California, Valencia: Weighted average auction price per box, Chicago and New York, by months, 1925-34*

| Market and season | Apr.   | May    | June   | July   | Aug.   | Sept.  | Oct.   | Nov.   | Dec.   | Average for season <sup>1</sup> |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------------------------------|
| <b>Chicago:</b>   |        |        |        |        |        |        |        |        |        |                                 |
| 1925.....         |        |        |        |        |        |        | \$8.38 | \$7.91 |        |                                 |
| 1926.....         |        | \$4.46 | \$4.37 | \$4.97 | \$4.48 | \$5.45 | 6.36   | 6.04   |        | \$5.04                          |
| 1927.....         |        | 4.42   | 4.90   | 5.43   | 5.96   | 6.70   | 6.81   | 6.50   |        | 5.59                            |
| 1928.....         |        | 7.16   | 6.40   | 7.36   | 7.15   | 7.60   | 7.17   |        |        | 7.11                            |
| 1929.....         |        |        | 4.08   | 3.87   | 4.45   | 4.36   | 4.57   |        |        | 4.23                            |
| 1930.....         | \$5.83 | 7.40   | 7.04   | 7.08   | 7.17   | 7.87   | 8.49   | 6.85   |        | 7.33                            |
| 1931.....         |        | 3.31   | 3.57   | 3.96   | 3.55   | 3.78   | 4.26   | 3.53   | \$3.23 | 3.75                            |
| 1932.....         | 2.72   | 3.29   | 3.10   | 3.35   | 2.96   | 3.25   | 3.34   | 3.59   | 3.19   | <sup>2</sup> 3.24               |
| 1933.....         |        |        | 2.86   | 3.10   | 3.15   | 3.35   | 3.31   | 2.81   | 2.13   | <sup>3</sup> 3.01               |
| 1934.....         |        | 3.88   | 4.40   | 3.97   | 3.99   | 3.84   | 4.56   | 4.40   |        | 4.16                            |
| <b>New York:</b>  |        |        |        |        |        |        |        |        |        |                                 |
| 1925.....         | 4.80   | 6.28   | 7.43   | 6.40   | 6.47   | 7.58   | 8.23   | 9.90   |        | 7.15                            |
| 1926.....         | 4.92   | 4.58   | 4.46   | 5.21   | 4.89   | 5.39   | 6.44   | 6.79   | 6.69   | 5.23                            |
| 1927.....         | 4.60   | 4.43   | 4.98   | 5.90   | 6.15   | 6.73   | 7.02   | 6.71   | 5.75   | 6.00                            |
| 1928.....         | 5.94   | 7.38   | 7.22   | 7.58   | 7.45   | 7.77   | 7.53   | 6.79   |        | 7.45                            |
| 1929.....         | 4.09   | 4.40   | 4.58   | 4.13   | 4.85   | 4.73   | 4.85   | 4.77   | 4.85   | 4.63                            |
| 1930.....         | 6.59   | 7.97   | 7.19   | 7.36   | 7.33   | 7.29   | 8.69   | 7.78   |        | 7.59                            |
| 1931.....         |        | 3.42   | 3.62   | 4.31   | 3.81   | 3.86   | 4.50   | 3.79   | 2.98   | 3.97                            |
| 1932.....         | 2.85   | 3.43   | 3.28   | 3.62   | 3.05   | 3.42   | 3.43   | 3.77   | 4.07   | 3.41                            |
| 1933.....         |        | 3.06   | 2.86   | 3.24   | 3.21   | 3.47   | 3.36   | 2.81   | 1.89   | 3.12                            |
| 1934.....         |        | 3.75   | 4.73   | 3.95   | 4.06   | 3.98   | 4.05   | 4.64   |        | 4.26                            |

<sup>1</sup> Where months are missing, average is for months shown.<sup>2</sup> Includes an average in March 1932 of \$2.73.<sup>3</sup> Includes an average in January 1934 of \$2.24.

Bureau of Agricultural Economics.

Compiled as follows: Chicago, October 1925-September 1927, from Bulletins 22 and 23, issued by Bureau of Railway Economics; October 1927-October 12, 1929, average computed from unchecked records of Bureau of Railway Economics; beginning Oct. 14, 1929, from Chicago Fruit and Vegetable Reporter. New York, reports of California Fruit Growers Exchange. Prices weighted by number of boxes sold. These prices are a new series and are not comparable with those published in Yearbooks prior to 1930.



TABLE 202.—*Oranges, California, Navel: Weighted average auction price per box, Chicago and New York, by months, 1925-26 to 1934-35*

| Market and season | Nov.   | Dec.   | Jan.   | Feb.   | Mar.   | Apr.   | May    | June   | Average for season <sup>1</sup> |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|---------------------------------|
| <b>Chicago:</b>   |        |        |        |        |        |        |        |        |                                 |
| 1925-26           |        | \$4.45 | \$4.24 | \$4.76 | \$4.83 | \$5.34 |        |        | \$4.74                          |
| 1926-27           |        | 4.68   | 4.63   | 4.87   | 4.58   | 4.63   |        |        | 4.66                            |
| 1927-28           |        | 5.42   | 4.62   | 5.41   | 5.55   | 6.07   |        |        | 5.43                            |
| 1928-29           | \$5.87 | 4.74   | 4.52   | 3.76   | 3.36   | 3.93   | \$3.51 |        | 4.09                            |
| 1929-30           | 6.29   | 5.75   | 5.08   | 5.19   | 6.25   | 6.31   | 6.82   |        | 5.79                            |
| 1930-31           | 5.33   | 3.49   | 3.45   | 3.20   | 3.45   | 3.31   | 4.14   |        | 3.60                            |
| 1931-32           | 3.63   | 3.09   | 2.71   | 3.39   | 3.00   | 3.09   | 3.87   |        | 3.13                            |
| 1932-33           | 3.14   | 2.78   | 2.54   | 2.65   | 2.55   | 2.43   | 2.87   | \$3.07 | 2.72                            |
| 1933-34           | 2.80   | 3.22   | 2.97   | 2.77   | 2.82   | 2.81   | 3.41   | 3.22   | 2.98                            |
| 1934-35           | 3.26   | 2.68   |        |        |        |        |        |        |                                 |
| <b>New York:</b>  |        |        |        |        |        |        |        |        |                                 |
| 1925-26           | 8.00   | 4.56   | 4.24   | 4.55   | 4.70   | 5.50   | 4.73   | 5.56   | 4.80                            |
| 1926-27           | 6.32   | 5.06   | 4.69   | 4.71   | 4.54   | 4.89   | 4.43   | 5.60   | 4.74                            |
| 1927-28           | 6.28   | 5.55   | 4.56   | 5.18   | 5.52   | 5.98   | 7.39   |        | 5.61                            |
| 1928-29           | 5.72   | 4.46   | 4.54   | 3.89   | 3.52   | 4.06   | 3.66   | 3.56   | 4.10                            |
| 1929-30           | 5.97   | 5.56   | 4.98   | 4.99   | 5.67   | 6.03   | 6.64   |        | 5.64                            |
| 1930-31           | 5.23   | 3.58   | 3.45   | 3.27   | 3.42   | 3.32   | 3.93   | 3.52   | 3.54                            |
| 1931-32           | 3.87   | 3.30   | 2.71   | 3.35   | 3.06   | 3.08   | 3.38   |        | 3.14                            |
| 1932-33           | 3.05   | 2.78   | 2.84   | 2.73   | 2.55   | 2.47   | 2.83   | 3.02   | 2.73                            |
| 1933-34           |        | 3.09   | 2.82   | 2.79   | 2.72   | 2.65   | 3.23   |        | 2.88                            |
| 1934-35           | 3.25   | 2.66   |        |        |        |        |        |        |                                 |

<sup>1</sup> Where months are missing, average is for months shown.<sup>2</sup> Includes an average in October 1930 of \$5.13.

Bureau of Agricultural Economics.

Compiled as follows: Chicago, December 1925-September 1927, from Bulletins 22 and 23, issued by Bureau of Railway Economics; October 1927-Oct. 12, 1929, average computed from unchecked records of Bureau of Railway Economics; beginning Oct. 14, 1929, from Chicago Fruit and Vegetable Reporter. New York, reports of California Fruit Growers Exchange. Prices weighted by number of boxes sold. These prices are a new series and are not comparable with those published in Yearbooks prior to 1930.

TABLE 203.—*Oranges, Florida: Weighted average auction price per box, Chicago and New York, by months, 1925-26 to 1934-35*

| Market and season | Oct.   | Nov.   | Dec.   | Jan.   | Feb.   | Mar.   | Apr.   | May    | June   | July   | Average for season <sup>1,2</sup> |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----------------------------------|
| <b>Chicago:</b>   |        |        |        |        |        |        |        |        |        |        |                                   |
| 1925-26           | \$7.35 | \$6.87 | \$3.30 | \$3.57 | \$4.34 | \$4.66 | \$5.40 | \$4.38 | \$6.41 |        | \$4.64                            |
| 1926-27           | 3.89   | 4.17   | 2.92   | 3.25   | 3.55   | 3.38   | 4.38   | 3.97   | 3.29   |        | 3.55                              |
| 1927-28           | 4.06   | 4.99   | 4.89   | 4.40   | 5.03   | 5.79   | 5.89   | 7.95   | 3.12   |        | 5.08                              |
| 1928-29           | 3.45   | 3.09   | 3.16   | 2.97   | 3.01   | 3.14   | 2.70   | 2.91   | 2.70   | \$2.34 | 2.96                              |
| 1929-30           |        | 4.15   | 4.18   | 4.03   | 4.41   | 5.15   | 6.76   | 5.71   |        |        | 4.72                              |
| 1930-31           | 4.58   | 3.01   | 2.50   | 2.68   | 2.98   | 3.72   | 3.76   | 3.70   | 3.83   |        | 3.33                              |
| 1931-32           | 2.62   | 2.97   | 2.74   | 2.86   | 3.18   | 3.52   | 3.83   | 3.59   | 3.29   |        | 3.24                              |
| 1932-33           |        | 3.03   | 2.76   | 2.67   | 2.44   | 2.43   | 2.36   | 2.29   | 2.55   | 2.70   | 2.52                              |
| 1933-34           | 1.74   | 2.42   | 2.31   | 2.48   | 2.45   | 2.79   | 2.83   | 3.43   | 4.19   |        | 2.68                              |
| 1934-35           | 3.04   | 2.71   | 2.30   |        |        |        |        |        |        |        |                                   |
| <b>New York:</b>  |        |        |        |        |        |        |        |        |        |        |                                   |
| 1925-26           | 7.45   | 7.19   | 4.00   | 4.25   | 4.44   | 5.02   | 5.80   | 5.87   | 6.72   |        | 5.10                              |
| 1926-27           | 3.70   | 4.79   | 3.53   | 3.76   | 3.91   | 4.10   | 4.36   | 4.75   | 4.54   | 3.12   | 4.11                              |
| 1927-28           | 3.67   | 6.31   | 5.59   | 5.23   | 5.97   | 6.29   | 6.94   | -8.58  | 9.11   |        | 6.24                              |
| 1928-29           | 5.08   | 3.71   | 3.55   | 3.45   | 3.30   | 3.30   | 3.55   | 3.33   | 2.99   | 2.92   | 3.40                              |
| 1929-30           | 3.42   | 4.04   | 4.21   | 4.49   | 4.44   | 4.98   | 7.13   | 7.42   | 6.60   |        | 4.94                              |
| 1930-31           | 4.76   | 3.45   | 3.01   | 2.91   | 3.19   | 3.79   | 3.80   | 3.85   | 4.02   | 4.62   | 3.54                              |
| 1931-32           | 2.64   | 3.20   | 3.11   | 3.10   | 3.38   | 3.55   | 3.75   | 3.63   | 3.59   | 4.38   | 3.43                              |
| 1932-33           | 2.88   | 3.21   | 2.79   | 2.81   | 2.31   | 2.32   | 2.17   | 2.17   | 2.21   | 2.78   | 2.43                              |
| 1933-34           | 2.47   | 2.49   | 2.36   | 2.44   | 2.43   | 2.84   | 2.75   | 3.55   | 4.66   | 3.26   | 2.78                              |
| 1934-35           | 3.20   | 2.64   | 2.42   |        |        |        |        |        |        |        |                                   |

<sup>1</sup> Where months are missing, average is for months shown.<sup>2</sup> Includes averages in other months as follows: New York, 1928-29, \$2.29 in August 1929; 1930-31, \$2.61 in September 1930; 1932-33, \$3.69 in August 1933; 1933-34, \$2.46 in September 1933.

Bureau of Agricultural Economics.

Compiled as follows: Chicago, October 1925-September 1927 from Bulletins 22 and 23, issued by Bureau of Railway Economics; October 1927-Oct. 12, 1929, average computed from unchecked records of Bureau of Railway Economics; beginning Oct. 14, 1929, from Chicago Fruit and Vegetable Reporter. New York, reports of California Fruit Growers Exchange. Prices weighted by number of boxes sold. These prices are a new series and are not comparable with those published in Yearbooks prior to 1930.

TABLE 204.—*Oranges: International trade, average 1925-29, annual 1930-33*

| Country                       | Calendar year    |             |                  |             |                  |                  |                  |             |                   |             |
|-------------------------------|------------------|-------------|------------------|-------------|------------------|------------------|------------------|-------------|-------------------|-------------|
|                               | Average 1925-29  |             | 1930             |             | 1931             |                  | 1932             |             | 1933 <sup>1</sup> |             |
|                               | Ex-ports         | Im-ports    | Ex-ports         | Im-ports    | Ex-ports         | Im-ports         | Ex-ports         | Im-ports    | Ex-ports          | Im-ports    |
| PRINCIPAL EXPORTING COUNTRIES | 1,000 boxes      | 1,000 boxes | 1,000 boxes      | 1,000 boxes | 1,000 boxes      | 1,000 boxes      | 1,000 boxes      | 1,000 boxes | 1,000 boxes       | 1,000 boxes |
| Spain.....                    | 20,935           | 1           | 30,654           | 0           | 24,173           | 1                | 24,902           | 2           | 27,641            | 1           |
| Italy.....                    | 3,435            | 0           | 3,744            | 0           | 3,431            | 0                | 1,739            | 1           | 4,036             | 1           |
| United States.....            | 3,285            | 14          | 2,236            | 0           | 4,849            | 0                | 3,129            | 0           | 3,399             | 0           |
| Palestine.....                | 2,123            | 0           | 2,998            | 0           | 2,667            | 0                | 3,553            | 0           | 4,200             | 0           |
| Union of South Africa.....    | 734              | 0           | 1,763            | 0           | 1,675            | 0                | 1,702            | 0           | 1,933             | 0           |
| Brazil.....                   | 571              | 0           | 812              | 0           | 2,054            | 0                | 1,930            | 0           | 2,554             | 0           |
| Japan.....                    | 449              | 0           | 378              | 0           | 263              | 0                | 412              | 0           | 652               | 0           |
| Cuba.....                     | 120              | 0           | 9                | 0           | 1                | 0                | 1                | 1           | -----             | -----       |
| Total.....                    | 31,652           | 15          | 42,594           | 0           | 39,113           | 1                | 37,368           | 4           | 44,415            | 2           |
| PRINCIPAL IMPORTING COUNTRIES |                  |             |                  |             |                  |                  |                  |             |                   |             |
| United Kingdom.....           | 0                | 11,307      | 0                | 13,774      | 0                | 14,310           | 0                | 12,939      | 0                 | 16,097      |
| Germany.....                  | ( <sup>2</sup> ) | 6,259       | ( <sup>2</sup> ) | 9,946       | ( <sup>2</sup> ) | 7,851            | ( <sup>2</sup> ) | 6,705       | ( <sup>2</sup> )  | 7,633       |
| France.....                   | 81               | 3,793       | 24               | 5,649       | 48               | 5,778            | 58               | 6,608       | 38                | 8,908       |
| Canada.....                   | 0                | 2,237       | 0                | 2,163       | 0                | ( <sup>2</sup> ) | 0                | 2,171       | 0                 | 2,048       |
| Netherlands.....              | 591              | 1,833       | 821              | 2,581       | 616              | 2,316            | 289              | 2,229       | 13                | 2,330       |
| Belgium.....                  | ( <sup>2</sup> ) | 875         | ( <sup>2</sup> ) | 1,913       | ( <sup>2</sup> ) | 1,893            | ( <sup>2</sup> ) | 2,018       | ( <sup>2</sup> )  | 2,312       |
| China.....                    | 292              | 462         | 328              | 315         | 329              | 218              | 339              | 298         | 408               | 102         |
| Switzerland.....              | 0                | 440         | 0                | 652         | 1                | 708              | 0                | 679         | 0                 | 907         |
| Czechoslovakia.....           | 0                | 416         | 0                | 791         | 0                | 788              | 0                | 567         | 0                 | 845         |
| Norway.....                   | 0                | 391         | 0                | 549         | 0                | 503              | 0                | 558         | 0                 | 600         |
| Sweden.....                   | 0                | 357         | 1                | 747         | 1                | 797              | 4                | 751         | 2                 | 947         |
| Egypt.....                    | 4                | 345         | 5                | 382         | 5                | 112              | 10               | 70          | 23                | 73          |
| Hungary.....                  | 0                | 293         | 0                | 415         | 0                | 336              | 0                | 240         | 0                 | 297         |
| Poland.....                   | 0                | 256         | 1                | 146         | 0                | 122              | 0                | 83          | 0                 | 71          |
| Irish Free State.....         | 0                | 255         | 0                | 325         | 0                | 332              | 0                | 336         | 0                 | 492         |
| Denmark.....                  | 0                | 234         | 0                | 299         | 0                | 289              | 0                | 293         | 0                 | 291         |
| Yugoslavia.....               | 0                | 161         | 0                | 253         | 0                | 216              | 0                | 156         | 0                 | 155         |
| Total.....                    | 968              | 29,914      | 1,180            | 40,900      | 1,000            | 36,569           | 700              | 36,701      | 484               | 44,108      |

<sup>1</sup> Preliminary.<sup>2</sup> 4-year average.<sup>3</sup> Included with lemons.<sup>4</sup> Includes some lemons.<sup>5</sup> Reported in value only.<sup>6</sup> Does not include Manchuria after June 30, 1932.<sup>7</sup> Beginning 1931, sweet lemons are included.

Bureau of Agricultural Economics; official sources. Converted to boxes of 78 pounds.

TABLE 205.—*Corn, canned: Pack<sup>1</sup> in the United States, 1922-34*

| State              | 1922        | 1923        | 1924        | 1925        | 1926        | 1927        | 1928        | 1929        | 1930        | 1931        | 1932        | 1933        | 1934        |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                    | 1,000 cases | 1,000 cases | 1,000 cases | 1,000 cases | 1,000 cases | 1,000 cases | 1,000 cases | 1,000 cases | 1,000 cases | 1,000 cases | 1,000 cases | 1,000 cases | 1,000 cases |
| Maine.....         | 1,066       | 923         | 1,294       | 1,693       | 1,347       | 806         | 966         | 1,521       | 1,930       | 1,245       | 1,071       | 1,055       | 1,547       |
| New York.....      | 616         | 434         | 1,749       | 1,311       | 1,038       | 676         | 666         | 782         | 647         | 1,080       | 496         | 584         | 836         |
| Ohio.....          | 1,073       | 1,360       | 787         | 2,375       | 1,735       | 846         | 1,138       | 1,551       | 750         | 1,871       | 405         | 505         | 1,021       |
| Indiana.....       | 865         | 1,208       | 846         | 2,223       | 2,044       | 703         | 1,131       | 1,250       | 1,272       | 2,362       | 1,139       | 838         | 1,037       |
| Illinois.....      | 1,939       | 2,833       | 2,310       | 4,030       | 3,053       | 1,961       | 3,017       | 3,153       | 3,261       | 3,788       | 2,024       | 1,812       | 1,548       |
| Wisconsin.....     | 825         | 648         | 338         | 1,148       | 843         | 310         | 578         | 547         | 686         | 712         | 140         | 279         | 688         |
| Minnesota.....     | 598         | 898         | 1,199       | 1,541       | 1,762       | 1,088       | 1,648       | 2,604       | 2,912       | 1,835       | 2,018       | 2,350       | 1,272       |
| Iowa.....          | 1,950       | 2,382       | 1,764       | 4,105       | 3,861       | 1,377       | 2,541       | 2,908       | 2,552       | 3,227       | 444         | 1,132       | 1,266       |
| Maryland.....      | 1,944       | 2,256       | 1,707       | 3,678       | 2,133       | 1,493       | 1,648       | 1,865       | 622         | 1,956       | 801         | 942         | 1,196       |
| Other States.....  | 934         | 1,134       | 1,087       | 2,216       | 1,753       | 1,087       | 1,164       | 1,306       | 1,060       | 1,339       | 820         | 696         | 857         |
| United States..... | 11,419      | 14,106      | 12,131      | 24,320      | 19,069      | 10,347      | 14,497      | 17,487      | 15,692      | 19,415      | 9,358       | 10,193      | 11,268      |

<sup>1</sup> Stated in cases of 24 No. 2 cans.

Bureau of Agricultural Economics; compiled from National Canners' Association data, 1922-26 and 1934; Bureau of Census, 1927-29; Foodstuffs Division, Bureau of Foreign and Domestic Commerce 1930-33.

TABLE 206.—*Corn, sweet, commercial crop for manufacture: Acreage, production, and season average price per ton received by producers, by States; average 1928-32, annual 1933 and 1934*

| State                           | Acreage            |              |              | Production                         |                                    |                                    | Price for crop of— |                |                |
|---------------------------------|--------------------|--------------|--------------|------------------------------------|------------------------------------|------------------------------------|--------------------|----------------|----------------|
|                                 | Average<br>1928-32 | 1933         | 1934         | Average<br>1928-32                 | 1933                               | 1934                               | Average<br>1928-32 | 1933           | 1934           |
|                                 | <i>Acres</i>       | <i>Acres</i> | <i>Acres</i> | <i>Short<br/>tons</i> <sup>1</sup> | <i>Short<br/>tons</i> <sup>1</sup> | <i>Short<br/>tons</i> <sup>1</sup> | <i>Dollars</i>     | <i>Dollars</i> | <i>Dollars</i> |
| Maine.....                      | 11,520             | 8,800        | 10,900       | 33,000                             | 29,900                             | 39,200                             | 21.28              | 12.80          | 14.90          |
| New Hampshire.....              | 1,000              | 870          | 700          | 2,600                              | 1,500                              | 2,200                              | 20.16              | 13.90          | 14.50          |
| Vermont.....                    | 1,690              | 870          | 1,060        | 4,100                              | 2,300                              | 2,800                              | 15.60              | 10.90          | 10.80          |
| New York.....                   | 20,580             | 12,700       | 14,600       | 33,400                             | 20,300                             | 33,600                             | 14.28              | 10.90          | 11.00          |
| Pennsylvania.....               | 6,600              | 3,200        | 5,400        | 8,400                              | 5,100                              | 9,200                              | 13.24              | 9.60           | 10.00          |
| Ohio.....                       | 26,100             | 10,200       | 21,000       | 45,400                             | 18,400                             | 39,900                             | 9.64               | 6.90           | 7.20           |
| Indiana.....                    | 34,680             | 26,600       | 33,500       | 57,600                             | 34,600                             | 50,000                             | 11.48              | 7.80           | 8.30           |
| Illinois.....                   | 59,860             | 47,500       | 63,700       | 131,700                            | 76,000                             | 89,200                             | 11.28              | 7.60           | 7.50           |
| Michigan.....                   | 6,630              | 2,900        | 5,000        | 7,800                              | 2,300                              | 4,500                              | 11.42              | 10.00          | 9.70           |
| Wisconsin.....                  | 10,860             | 4,200        | 11,900       | 23,900                             | 10,100                             | 27,400                             | 10.30              | 7.20           | 8.00           |
| Minnesota.....                  | 43,000             | 34,000       | 47,800       | 101,400                            | 98,600                             | 81,300                             | 9.76               | 7.20           | 6.00           |
| Iowa.....                       | 41,090             | 18,700       | 27,000       | 95,100                             | 41,100                             | 51,300                             | 8.90               | 5.60           | 6.20           |
| Nebraska.....                   | 5,750              | 3,900        | 1,000        | 9,800                              | 7,000                              | 1,200                              | 8.78               | 7.40           | 6.00           |
| Delaware.....                   | 3,400              | 2,000        | 2,400        | 6,300                              | 4,000                              | 6,000                              | 11.00              | 8.70           | 9.50           |
| Maryland.....                   | 34,760             | 19,600       | 29,100       | 48,200                             | 35,300                             | 43,600                             | 12.40              | 8.50           | 10.00          |
| Tennessee.....                  | 2,980              | 730          | 2,130        | 6,400                              | 2,300                              | 5,300                              | 13.70              | 7.60           | 8.70           |
| Other States <sup>2</sup> ..... | 3,450              | 3,200        | 4,540        | 7,900                              | 5,600                              | 8,900                              | 12.48              | 8.18           | 9.89           |
| Total.....                      | 313,950            | 199,670      | 236,720      | 628,000                            | 394,300                            | 495,600                            | 11.50              | 8.01           | 8.44           |

<sup>1</sup> Tonnage in bush.<sup>2</sup> Other States includes Colorado, Idaho, Kansas, Kentucky, Missouri, Montana, Oklahoma, Oregon, South Dakota, Virginia, Washington, and Wyoming.

Bureau of Agricultural Economics; estimates based on returns from canning establishments.

TABLE 207.—*Cranberries: Production and average price per barrel received by producers, by States, average 1927-31, and annual 1933 and 1934*

| State              | Production          |                |                   | Price for crop of— |                   |
|--------------------|---------------------|----------------|-------------------|--------------------|-------------------|
|                    | Average,<br>1927-31 | 1933           | 1934 <sup>1</sup> | 1933               | 1934 <sup>1</sup> |
|                    | <i>Barrels</i>      | <i>Barrels</i> | <i>Barrels</i>    | <i>Dollars</i>     | <i>Dollars</i>    |
| Massachusetts..... | 386,800             | 506,000        | 290,000           | 5.50               | 10.00             |
| New Jersey.....    | 117,800             | 142,000        | 70,000            | 5.50               | 11.00             |
| Wisconsin.....     | 40,200              | 47,000         | 59,000            | 6.75               | 11.50             |
| Washington.....    | 13,296              | 4,800          | 18,300            | 7.95               | 11.50             |
| Oregon.....        | 5,160               | 3,900          | 6,000             | 7.95               | 11.50             |
| United States..... | 563,256             | 703,700        | 443,300           | 5.61               | 10.44             |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

## STATISTICS OF FRUITS AND VEGETABLES

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TABLE 208.—*Cucumbers, commercial crop: Acreage, production, and season average price per bushel received by producers; average 1928-32, annual 1933 and 1934*

| Utilization, marketing season, and State | Acreage         |              |              | Production                        |                                   |                                   | Price for crop of— |                |                |
|--|-----------------|--------------|--------------|-----------------------------------|-----------------------------------|-----------------------------------|--------------------|----------------|----------------|
|  | Average 1928-32 | 1933         | 1934         | Average 1928-32                   | 1933                              | 1934                              | Average 1928-32    | 1933           | 1934           |
| For market:                              | <i>Acres</i>    | <i>Acres</i> | <i>Acres</i> | <i>1,000 bushels</i> <sup>1</sup> | <i>1,000 bushels</i> <sup>1</sup> | <i>1,000 bushels</i> <sup>1</sup> | <i>Dollars</i>     | <i>Dollars</i> | <i>Dollars</i> |
| Fall.....                                | 1,390           | 1,600        | 1,750        | 104                               | 101                               | 171                               | 2.47               | 1.50           | 1.19           |
| Early (sec. 1).....                      | 14,630          | 10,400       | 9,300        | 2 1,128                           | 484                               | 572                               | 1.88               | 1.58           | 1.68           |
| Early (sec. 2).....                      | 12,290          | 10,570       | 14,750       | 2 1,289                           | 774                               | 1,049                             | .74                | .71            | .71            |
| Second early.....                        | 7,780           | 5,150        | 5,200        | 2 733                             | 300                               | 385                               | .84                | .53            | .64            |
| Intermediate.....                        | 7,710           | 8,060        | 7,650        | 984                               | 907                               | 988                               | .85                | .47            | .59            |
| Late (sec. 1).....                       | 1,890           | 2,690        | 2,300        | 220                               | 207                               | 242                               | 1.95               | .59            | .69            |
| Late (sec. 2).....                       | 1,160           | 2,240        | 1,040        | 99                                | 121                               | 73                                | 1.15               | .85            | 1.18           |
| Total.....                               | 46,850          | 40,710       | 41,990       | 2 4,607                           | 2,894                             | 3,480                             | 1.12               | .79            | .86            |
| For pickles:                             |                 |              |              |                                   |                                   |                                   |                    |                |                |
| Massachusetts.....                       | 520             | 400          | 400          | 68                                | 80                                | 20                                | .62                | .30            | .30            |
| New York.....                            | 3,980           | 4,000        | 3,000        | 453                               | 360                               | 255                               | .80                | .50            | .60            |
| Ohio.....                                | 4,010           | 4,200        | 6,050        | 263                               | 210                               | 369                               | .93                | .43            | .45            |
| Indiana.....                             | 8,430           | 4,700        | 6,700        | 448                               | 179                               | 201                               | .73                | .46            | .46            |
| Illinois.....                            | 1,280           | 1,460        | 3,200        | 69                                | 110                               | 58                                | .85                | .62            | .70            |
| Michigan.....                            | 21,080          | 20,000       | 22,500       | 973                               | 1,120                             | 1,035                             | .75                | .43            | .48            |
| Wisconsin.....                           | 11,420          | 6,600        | 11,300       | 608                               | 337                               | 542                               | .86                | .40            | .43            |
| Minnesota.....                           | 2,980           | 1,220        | 2,350        | 123                               | 39                                | 68                                | .73                | .34            | .42            |
| Iowa.....                                | 2,490           | 1,860        | 1,200        | 111                               | 97                                | 26                                | .77                | .35            | .41            |
| Missouri.....                            | 1,830           | 640          | 630          | 57                                | 10                                | 4                                 | .79                | .30            | .34            |
| Maryland.....                            | 1,620           | 1,500        | 1,600        | 125                               | 154                               | 197                               | .62                | .40            | .40            |
| Virginia.....                            | 1,740           | 3,000        | 3,000        | 144                               | 258                               | 162                               | .68                | .55            | .57            |
| Mississippi.....                         | 4,510           | 400          | 4,000        | 184                               | 9                                 | 244                               | .61                | .38            | .36            |
| Louisiana.....                           | 930             | 400          | 1,000        | 41                                | 24                                | 40                                | .74                | .38            | .45            |
| Texas.....                               | 1,500           | 900          | 1,200        | 42                                | 33                                | 86                                | .65                | .44            | .42            |
| Colorado.....                            | 1,890           | 460          | 1,160        | 224                               | 80                                | 132                               | .51                | .38            | .45            |
| Washington.....                          | 490             | 200          | 240          | 66                                | 28                                | 36                                | .68                | .65            | .53            |
| Oregon.....                              | 1,480           | 630          | 750          | 134                               | 110                               | 105                               | .68                | .50            | .50            |
| California.....                          | 2,500           | 1,050        | 1,790        | 471                               | 143                               | 326                               | .55                | .41            | .41            |
| Other States <sup>2</sup> .....          | 4,950           | 3,840        | 7,000        | 368                               | 357                               | 502                               | .69                | .55            | .54            |
| Total.....                               | 79,180          | 57,760       | 79,760       | 4,972                             | 3,738                             | 4,358                             | .73                | .45            | .47            |

<sup>1</sup> Bushels containing approximately 48 pounds.<sup>2</sup> Includes some quantities not harvested on account of market conditions: 1,551,000 bushels in 1930; 234,000 in 1931, and 263,000 in 1932. Price refers to harvested portion of crop.<sup>3</sup> Other States includes Alabama, Connecticut, Delaware, Florida, Kentucky, Maine, Nebraska, New Jersey, North Carolina, Oklahoma, Pennsylvania, South Dakota, Utah, and Wyoming.

Bureau of Agricultural Economics; estimates based on returns from crop reporters.

TABLE 209.—*Cucumbers: <sup>1</sup> Car-lot shipments, by State of origin, 1928-34*

| State               | Calendar year |             |             |             |             |             |             |             |             |             |             |                   |
|---------------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|
|                     | 1923          | 1924        | 1925        | 1926        | 1927        | 1928        | 1929        | 1930        | 1931        | 1932        | 1933        | 1934 <sup>2</sup> |
| New York.....       | <i>Cars</i>   | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i>       |
| New Jersey.....     | 283           | 694         | 686         | 456         | 607         | 1,001       | 529         | 907         | 714         | 574         | 699         | 421               |
| Ohio.....           | 258           | 276         | 481         | 261         | 388         | 370         | 161         | 117         | 149         | 57          | 32          | 57                |
| Indiana.....        | 68            | 111         | 91          | 187         | 203         | 191         | 119         | 131         | 208         | 104         | 74          | 21                |
| Illinois.....       | 6             | 16          | 57          | 104         | 135         | 147         | 126         | 63          | 35          | 21          | 11          | 15                |
| Delaware.....       | 15            | 77          | 245         | 150         | 101         | 143         | 118         | 254         | 151         | 94          | 65          | 53                |
| Maryland.....       | 225           | 240         | 302         | 304         | 366         | 214         | 163         | 119         | 225         | 155         | 182         | 116               |
| Virginia.....       | 446           | 311         | 598         | 479         | 692         | 563         | 469         | 527         | 680         | 280         | 433         | 283               |
| North Carolina..... | 84            | 387         | 448         | 200         | 339         | 229         | 179         | 166         | 148         | 100         | 69          | 49                |
| South Carolina..... | 1,175         | 1,639       | 1,562       | 869         | 935         | 812         | 651         | 691         | 439         | 527         | 235         | 288               |
| Georgia.....        | 720           | 918         | 794         | 687         | 916         | 663         | 1,043       | 1,107       | 716         | 738         | 683         | 572               |
| Florida.....        | 45            | 154         | 72          | 62          | 72          | 76          | 135         | 162         | 82          | 159         | 216         | 302               |
| Alabama.....        | 1,647         | 1,381       | 1,963       | 2,048       | 2,300       | 1,672       | 2,271       | 1,137       | 1,463       | 699         | 679         | 737               |
| Arkansas.....       | 367           | 576         | 706         | 684         | 533         | 606         | 795         | 882         | 470         | 269         | 193         | 587               |
| Louisiana.....      | 24            | 93          | 145         | 234         | 228         | 228         | 195         | 131         | 107         | 124         | 18          | 26                |
| Texas.....          | 6             | 28          | 6           | 36          | 36          | 58          | 113         | 144         | 93          | 121         | 88          | 54                |
| Other States.....   | 46            | 147         | 72          | 316         | 178         | 382         | 294         | 893         | 678         | 677         | 346         | 317               |
| Total.....          | 185           | 134         | 264         | 195         | 121         | 108         | 108         | 232         | 122         | 83          | 61          | 68                |
| Total.....          | 5,700         | 7,182       | 8,492       | 7,272       | 8,180       | 7,468       | 7,469       | 7,663       | 6,480       | 4,722       | 4,134       | 3,966             |

<sup>1</sup> Cucumbers for pickling are not included.<sup>2</sup> Preliminary.<sup>3</sup> Principally hothouse stock.Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.  
Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

TABLE 210.—*Dates: Production and average price per ton received by producers, California, 1925-34*

| Item   | 1925 | 1926 | 1927 | 1928 | 1929 | 1930  | 1931  | 1932  | 1933  | 1934 <sup>1</sup> |
|--|------|------|------|------|------|-------|-------|-------|-------|-------------------|
| Production.....short tons..                        | 340  | 522  | 710  | 817  | 865  | 1,580 | 1,200 | 2,150 | 2,200 | 2,610             |
| Price.....dollars..                                | 282  | 342  | 302  | 263  | 222  | 140   | 60    | 40    | 70    | 75                |
| Farm value, basis average price<br>1,000 dollars.. | 96   | 179  | 214  | 214  | 192  | 218   | 72    | 86    | 154   | 196               |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 211.—*Figs: Production, and average price per ton received by producers, California and Texas, 1924-34*

| Year                    | Dried, California |         |                                 | Marketed fresh and canned,<br>California |         |                                 | Preserving, Texas |         |                                 |
|-------------------------|-------------------|---------|---------------------------------|--|---------|---------------------------------|-------------------|---------|---------------------------------|
|                         | Production        | Price   | Farm value, basis average price | Production                               | Price   | Farm value, basis average price | Production        | Price   | Farm value, basis average price |
|                         | Short tons        | Dollars | 1,000 dollars                   | Short tons                               | Dollars | 1,000 dollars                   | Short tons        | Dollars | 1,000 dollars                   |
| 1924.....               | 8,500             | 100.00  | 850                             | 2,135                                    | 104.00  | 222                             | 1,180             | 102.00  | 120                             |
| 1925.....               | 9,600             | 110.00  | 1,056                           | 3,075                                    | 100.00  | 308                             | 2,240             | 85.00   | 190                             |
| 1926.....               | 11,350            | 95.00   | 1,078                           | 5,100                                    | 112.00  | 571                             | 4,978             | 68.00   | 339                             |
| 1927.....               | 12,000            | 45.00   | 540                             | 5,400                                    | 100.00  | 540                             | 4,879             | 68.00   | 332                             |
| 1928.....               | 11,600            | 45.00   | 518                             | 6,130                                    | 87.00   | 533                             | 6,613             | 65.50   | 427                             |
| 1929.....               | 17,000            | 90.00   | 1,530                           | 7,300                                    | 100.00  | 730                             | 2,778             | 70.00   | 194                             |
| 1930.....               | 21,000            | 48.00   | 1,008                           | 7,700                                    | 90.00   | 693                             | 2,961             | 70.00   | 207                             |
| 1931.....               | 17,000            | 87.00   | 629                             | 6,300                                    | 74.00   | 466                             | 1,851             | 65.00   | 120                             |
| 1932.....               | 17,000            | 25.47   | 433                             | 6,500                                    | 36.50   | 237                             | 504               | 50.00   | 25                              |
| 1933.....               | 19,000            | 43.80   | 832                             | 5,900                                    | 50.50   | 298                             | 655               | 65.00   | 43                              |
| 1934 <sup>1</sup> ..... | 19,500            | 43.15   | 841                             | 9,000                                    | 51.85   | 467                             | 966               | 62.20   | 60                              |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board. Data for earlier years in 1928 Yearbook, table 165.

TABLE 212.—*Grapes: Production, average price per ton received by producers, and foreign trade, United States, 1919-34*

| Year                    | Production           |            |              | United States price | United States farm value, basis average price | Foreign trade, year beginning July 1 |         |                          |                          |
|-------------------------|----------------------|------------|--------------|---------------------|---|--------------------------------------|---------|--------------------------|--------------------------|
|                         | Total, United States | California | Other States |                     |   | Domestic exports                     | Imports | Net exports <sup>2</sup> |                          |
|                         | Short tons           | Short tons | Short tons   |                     |   |                                      |         | Total                    | Percentage of production |
| 1919.....               | 1,575,587            | 1,345,000  | 230,587      | -----               | 1,000 dollars                                 | 0                                    | 6,404   | \$ 0,290                 | -----                    |
| 1920.....               | 1,520,570            | 1,273,000  | 247,570      | -----               | -----   | 0                                    | 12,018  | \$ 11,625                | -----                    |
| 1921.....               | 1,219,548            | 1,100,000  | 119,548      | -----               | -----   | 486                                  | 9,397   | \$ 9,220                 | -----                    |
| 1922.....               | 2,085,315            | 1,806,000  | 279,315      | -----               | -----   | 7,011                                | 16,324  | \$ 9,139                 | -----                    |
| 1923.....               | 2,252,206            | 2,030,000  | 222,206      | -----               | -----   | 10,123                               | 10,015  | 198                      | (9)                      |
| 1924.....               | 1,776,047            | 1,535,000  | 241,047      | 39.21               | 69,646  | 10,151                               | 1,608   | 8,560                    | .5                       |
| 1925.....               | 2,200,674            | 2,050,000  | 150,674      | 32.17               | 66,355  | 12,134                               | 1,415   | 10,735                   | .5                       |
| 1926.....               | 2,439,555            | 2,129,000  | 310,555      | 26.92               | 65,262  | 15,896                               | 1,011   | 14,414                   | .6                       |
| 1927.....               | 2,589,652            | 2,406,000  | 183,652      | 26.86               | 65,736  | 19,410                               | 1,735   | 17,747                   | .7                       |
| 1928.....               | 2,649,739            | 2,366,000  | 283,739      | 20.08               | 50,080  | 27,819                               | 1,703   | 26,155                   | 1.0                      |
| 1929.....               | 2,080,547            | 1,827,000  | 253,547      | 27.28               | 56,749  | 23,079                               | 2,687   | 20,448                   | 1.0                      |
| 1930.....               | 2,443,042            | 2,181,000  | 262,042      | 19.33               | 44,969  | 24,900                               | 2,856   | 22,107                   | .9                       |
| 1931.....               | 1,621,315            | 1,320,000  | 301,315      | 22.39               | 36,085  | 13,808                               | 3,013   | 10,902                   | .7                       |
| 1932.....               | 2,203,752            | 1,926,000  | 277,752      | 13.16               | 26,982  | 14,676                               | 3,157   | 11,616                   | .5                       |
| 1933.....               | 1,909,581            | 1,680,000  | 249,581      | 17.75               | 33,841  | 13,344                               | 3,928   | 9,416                    | .5                       |
| 1934 <sup>1</sup> ..... | 1,775,168            | 1,544,000  | 231,168      | 20.01               | 35,519  | -----                                | -----   | -----                    | -----                    |

<sup>1</sup> Compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1920-26; January and June issues, 1927-34.<sup>2</sup> Total exports (domestic plus foreign) minus total imports. Beginning 1933-34 domestic exports minus imports for consumption. (See introductory text.)<sup>3</sup> Net import equals total imports minus total exports (domestic plus foreign).<sup>4</sup> January-June 1922; reported in value only prior this date.<sup>5</sup> Includes some quantities not harvested on account of market conditions as follows: 100,000 tons in 1922; 138,000 in 1925; 15,000 in 1926; 142,000 in 1927; 153,000 in 1928; 433,000 in 1930, including 316,000 tons sold but left on the vines; 10,000 in 1931; 154,000 in 1932; and 3,000 in 1933. Price and value are based on the quantities actually harvested, plus a quantity of fruit that was sold but left on the vines in 1930.<sup>6</sup> Less than 0.05 percent.<sup>7</sup> Preliminary.

Bureau of Agricultural Economics; production figures are estimates of the Crop Reporting Board, revised. Prices are based upon returns from crop reporters.

TABLE 213.—*Grapes: Production and average price per ton received by producers, by States, average 1927-31, and annual 1933 and 1934*

| State and division     | Production             |                        |                   | Price for crop of— |                   |
|------------------------|------------------------|------------------------|-------------------|--------------------|-------------------|
|                        | Average,<br>1927-31    | 1933                   | 1934 <sup>1</sup> | 1933               | 1934 <sup>1</sup> |
|                        | <i>Short tons</i>      | <i>Short tons</i>      | <i>Short tons</i> | <i>Dollars</i>     | <i>Dollars</i>    |
| Maine.....             | 29                     | 24                     | 7                 | 80.00              | 95.00             |
| New Hampshire.....     | 48                     | 43                     | 29                | 80.00              | 95.00             |
| Vermont.....           | 36                     | 31                     | 11                | 80.00              | 85.00             |
| Massachusetts.....     | 360                    | 353                    | 307               | 60.00              | 80.00             |
| Rhode Island.....      | 239                    | 207                    | 171               | 70.00              | 80.00             |
| Connecticut.....       | 1,207                  | 1,240                  | 1,023             | 55.00              | 80.00             |
| New York.....          | 76,540                 | 64,800                 | 49,400            | 24.00              | 30.00             |
| New Jersey.....        | 2,835                  | 2,535                  | 2,464             | 38.00              | 40.00             |
| Pennsylvania.....      | 22,798                 | 17,808                 | 18,981            | 25.00              | 27.00             |
| North Atlantic.....    | 104,091                | 87,041                 | 72,393            | 25.34              | 30.65             |
| Ohio.....              | 23,724                 | 27,412                 | 22,720            | 29.00              | 35.00             |
| Indiana.....           | 2,608                  | 2,590                  | 2,812             | 26.00              | 30.00             |
| Illinois.....          | 5,223                  | 5,988                  | 5,658             | 26.00              | 30.00             |
| Michigan.....          | 57,150                 | 58,562                 | 61,145            | 20.00              | 25.00             |
| Wisconsin.....         | 320                    | 357                    | 274               | 70.00              | 75.00             |
| Minnesota.....         | 233                    | 307                    | 194               | 70.00              | 75.00             |
| Iowa.....              | 6,430                  | 6,624                  | 5,060             | 35.00              | 40.00             |
| Missouri.....          | 8,474                  | 9,880                  | 7,540             | 35.00              | 40.00             |
| Nebraska.....          | 2,398                  | 1,824                  | 1,216             | 60.00              | 65.00             |
| Kansas.....            | 4,066                  | 4,158                  | 2,574             | 45.00              | 50.00             |
| North Central.....     | 110,626                | 117,700                | 109,193           | 26.41              | 30.46             |
| Delaware.....          | 2,015                  | 2,448                  | 2,430             | 45.00              | 50.00             |
| Maryland.....          | 714                    | 596                    | 614               | 55.00              | 50.00             |
| Virginia.....          | 1,897                  | 1,686                  | 1,692             | 75.00              | 70.00             |
| West Virginia.....     | 994                    | 990                    | 944               | 80.00              | 85.00             |
| North Carolina.....    | 4,461                  | 4,661                  | 4,640             | 45.00              | 65.00             |
| South Carolina.....    | 966                    | 958                    | 829               | 65.00              | 70.00             |
| Georgia.....           | 860                    | 769                    | 738               | 90.00              | 95.00             |
| Florida.....           | 861                    | 767                    | 1,026             | 80.00              | 75.00             |
| South Atlantic.....    | 12,768                 | 12,845                 | 12,913            | 58.23              | 66.44             |
| Kentucky.....          | 898                    | 1,174                  | 1,113             | 45.00              | 50.00             |
| Tennessee.....         | 1,014                  | 1,155                  | 1,110             | 55.00              | 60.00             |
| Alabama.....           | 619                    | 625                    | 641               | 65.00              | 60.00             |
| Mississippi.....       | 232                    | 231                    | 228               | 75.00              | 80.00             |
| Arkansas.....          | 10,193                 | 12,120                 | 16,640            | 26.00              | 25.00             |
| Louisiana.....         | 46                     | 41                     | 44                | 75.00              | 70.00             |
| Oklahoma.....          | 2,341                  | 2,610                  | 2,112             | 40.00              | 45.00             |
| Texas.....             | 1,626                  | 1,820                  | 1,595             | 55.00              | 60.00             |
| South Central.....     | 16,969                 | 19,776                 | 23,483            | 35.24              | 33.60             |
| Idaho.....             | 541                    | 488                    | 574               | 55.00              | 47.00             |
| Colorado.....          | 335                    | 400                    | 450               | 55.00              | 44.00             |
| New Mexico.....        | 832                    | 768                    | 1,836             | 60.00              | 44.00             |
| Arizona.....           | 1,671                  | 2,016                  | 1,732             | 35.00              | 40.00             |
| Utah.....              | 1,068                  | 930                    | 1,200             | 80.00              | 48.00             |
| Nevada.....            | 150                    | 92                     | 107               | 85.00              | 80.00             |
| Washington.....        | 5,325                  | 5,320                  | 5,638             | 17.00              | 21.00             |
| Oregon.....            | 2,434                  | 2,205                  | 2,240             | 20.00              | 26.00             |
| California.....        | <sup>2</sup> 2,020,000 | <sup>2</sup> 1,660,000 | 1,544,000         | 16.13              | 18.08             |
| Wine varieties.....    | <sup>2</sup> 434,800   | 420,000                | 446,000           | 19.75              | 14.80             |
| Raisin varieties.....  | <sup>2</sup> 1,205,800 | 970,000                | 799,000           | 14.93              | 17.76             |
| Dry <sup>3</sup> ..... | 224,400                | 185,000                | 154,000           | 57.40              | 68.40             |
| Not dried.....         | <sup>2</sup> 308,200   | 190,000                | 183,000           | 17.30              | 20.00             |
| Table varieties.....   | <sup>2</sup> 379,400   | <sup>2</sup> 270,000   | 299,000           | 14.80              | 23.80             |
| Western.....           | <sup>2</sup> 2,032,405 | <sup>2</sup> 1,672,210 | 1,557,186         | 16.22              | 18.19             |
| United States.....     | <sup>2</sup> 2,276,859 | <sup>2</sup> 1,909,581 | 1,775,168         | 17.75              | 20.01             |

<sup>1</sup> Preliminary.<sup>2</sup> Includes some quantities not harvested on account of market conditions as follows: Wine varieties, 1928, 18,000 tons; 1930, 40,000; 1931, 10,000; raisin varieties (not dried), 1928, 60,000 tons; 1930, 319,000 including 316,000 sold but left on the vines; table varieties, 1927, 142,000 tons; 1928, 75,000; 1930, 74,000; 1933, 3,000. Prices and value are computed on the harvested crop, plus a quantity of fruit that was sold but left on the vines in 1930.<sup>3</sup> Dried basis: 1 ton of dried raisins equivalent to 4 tons of fresh grapes.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 214.—*Grapes: Car-lot shipments, by State of origin, 1923-34*

| State             | Crop-movement season <sup>1</sup> |             |             |             |             |             |             |             |             |             |             |                   |
|-------------------|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|
|                   | 1923                              | 1924        | 1925        | 1926        | 1927        | 1928        | 1929        | 1930        | 1931        | 1932        | 1933        | 1934 <sup>2</sup> |
|                   | <i>Cars</i>                       | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i>       |
| New York.....     | 4,312                             | 5,641       | 3,763       | 7,242       | 3,050       | 2,541       | 2,049       | 4,240       | 1,670       | 1,129       | 412         |                   |
| Pennsylvania....  | 847                               | 1,166       | 589         | 1,350       | 689         | 1,076       | 879         | 809         | 1,290       | 613         | 421         | 355               |
| Michigan.....     | 4,202                             | 4,680       | 398         | 3,081       | 2,023       | 1,571       | 1,746       | 1,620       | 528         | 892         | 592         | 538               |
| Iowa.....         | 217                               | 79          | 50          | 176         | 186         | 234         | 369         | 226         | 185         | 203         | 118         | 113               |
| Missouri.....     | 58                                | 101         | 166         | 686         | 108         | 415         | 225         | 316         | 329         | 170         | 111         | 91                |
| Arkansas.....     | 33                                | 243         | 394         | 1,170       | 108         | 998         | 510         | 322         | 313         | 233         | 190         | 77                |
| Washington.....   | 62                                | 83          | 191         | 125         | 167         | 235         | 232         | 117         | 94          | 73          | 38          | 56                |
| California.....   | 55,348                            | 57,695      | 76,066      | 64,327      | 75,925      | 73,157      | 59,205      | 65,185      | 39,777      | 42,239      | 29,282      | 30,379            |
| Other States..... | 257                               | 245         | 261         | 433         | 411         | 332         | 395         | 271         | 190         | 178         | 144         | 91                |
| Total.....        | 65,336                            | 69,933      | 81,878      | 78,590      | 82,677      | 81,768      | 66,102      | 70,915      | 46,946      | 46,271      | 32,025      | 32,112            |

<sup>1</sup> Crop-movement season extends from June 1 through December of a given year. Figures for California include shipments in January, February, and March following the regular crop-movement season.

<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

TABLE 215.—*Grapes: Number of packages of California varieties sold, and weighted season average price,<sup>1</sup> auction sales in 11 markets,<sup>2</sup> 1929-34*

| Variety or type                    | Number of packages (crates or lugs) <sup>3</sup> |              |              |              |              |              | Average price per package |             |             |             |             |             |
|------------------------------------|--|--------------|--------------|--------------|--------------|--------------|---------------------------|-------------|-------------|-------------|-------------|-------------|
|                                    | 1929   | 1930         | 1931         | 1932         | 1933         | 1934         | 1929                      | 1930        | 1931        | 1932        | 1933        | 1934        |
|                                    | <i>Thou-</i>                                     | <i>Thou-</i> | <i>Thou-</i> | <i>Thou-</i> | <i>Thou-</i> | <i>Thou-</i> | <i>Dol.</i>               | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> |
|                                    | <i>sands</i>                                     | <i>sands</i> | <i>sands</i> | <i>sands</i> | <i>sands</i> | <i>sands</i> |                           |             |             |             |             |             |
| Flame Tokay.....                   | 1,867  | 2,485        | 1,591        | 1,480        | 1,469        | 1,332        | 1.42                      | 1.15        | 1.59        | 1.10        | 1.18        | 1.34        |
| Emperor.....                       | 56   | 41           | 991          | 703          | 649          | 788          | 1.62                      | 1.06        | 1.61        | 1.11        | 1.34        | 1.67        |
| Red Malaga.....                    | 113  | 119          | 157          | 274          | 195          | 275          | 2.20                      | 1.79        | 1.93        | 1.17        | 1.65        | 1.79        |
| Ribier.....                        | 89   | 152          | 184          | 251          | 224          | 346          | 1.86                      | 1.67        | 1.71        | 1.43        | 1.51        | 1.74        |
| Sultanina (Thompson Seedless)..... | 2,737  | 2,377        | 1,555        | 2,237        | 1,779        | 2,329        | 1.48                      | 1.28        | 1.53        | 1.27        | 1.43        | 1.52        |
| Malaga.....                        | 2,045  | 2,096        | 2,976        | 1,351        | 1,162        | 1,558        | 1.37                      | 1.08        | 1.22        | .90         | 1.11        | 1.15        |
| Muscat.....                        | 2,754  | 2,455        | 931          | 2,770        | 1,467        | 807          | 1.06                      | 1.08        | 1.18        | .76         | .99         | 1.11        |
| Alicante Bouschet.....             | 4,759  | 5,123        | 3,480        | 3,845        | 1,957        | 2,339        | 1.29                      | 1.11        | 1.16        | .91         | 1.07        | 1.08        |
| Carignane.....                     | 1,541  | 1,973        | 1,654        | 1,476        | 737          | 858          | 1.14                      | .97         | 1.11        | .73         | .98         | 1.02        |
| Cornichon.....                     | 314  | 268          | 264          | 132          | 147          | 163          | 1.26                      | .98         | 1.26        | .94         | 1.10        | 1.29        |
| Mataro.....                        | 199  | 176          | 172          | 204          | 40           | 31           | 1.14                      | 1.13        | .99         | .85         | 1.01        | .97         |
| Mission.....                       | 297  | 283          | 308          | 179          | 127          | 50           | 1.23                      | .91         | 1.15        | .68         | .92         | 1.10        |
| Petit Syrah.....                   | 276  | 235          | 113          | 152          | 16           | 26           | 1.15                      | 1.11        | .92         | .88         | 1.22        | 1.02        |
| Zinfandel.....                     | 1,425  | 1,112        | 624          | 1,309        | 627          | 598          | 1.14                      | 1.06        | 1.05        | .95         | 1.13        | 1.16        |
| Total or average.....              | 18,472   | 18,895       | 15,000       | 16,363       | 10,596       | 11,500       | 1.29                      | 1.11        | 1.20        | .96         | 1.17        | 1.29        |

<sup>1</sup> Season begins about Aug. 1 and ends in November.

<sup>2</sup> Baltimore, Boston, Chicago, Cincinnati, Cleveland, Detroit, Minneapolis, New York, Philadelphia, Pittsburgh, and St. Louis.

<sup>3</sup> Packages containing about 26-28 pounds.

Bureau of Agricultural Economics; compiled from daily reports of the fruit and vegetable market news service. Only principal varieties shown.

TABLE 216.—*Grapes, Concord: Average l. c. l. price per 12-quart basket to jobbers, specified markets, by State of origin, October 1925-34*

| Season    | Price of New York Concord at— |              |                   |                 | Price of Michigan Concord at— |                  |              |
|-----------|-------------------------------|--------------|-------------------|-----------------|-------------------------------|------------------|--------------|
|           | Boston                        | New York     | Philadel-<br>phia | Pitts-<br>burgh | Chicago                       | Minne-<br>apolis | St. Louis    |
|           | <i>Cents</i>                  | <i>Cents</i> | <i>Cents</i>      | <i>Cents</i>    | <i>Cents</i>                  | <i>Cents</i>     | <i>Cents</i> |
| 1925..... | 102                           | 114          | 104               | 109             | 109                           | 118              | -----        |
| 1926..... | 61                            | 62           | 56                | 60              | 43                            | 67               | 56           |
| 1927..... | 56                            | 61           | 64                | 64              | 55                            | 76               | 65           |
| 1928..... | 60                            | 54           | 49                | 51              | 44                            | 59               | 53           |
| 1929..... | 50                            | 54           | 51                | 48              | 41                            | 56               | 49           |
| 1930..... | 57                            | 51           | 54                | 48              | 41                            | 53               | 56           |
| 1931..... | -----                         | 36           | 34                | 29              | 32                            | 44               | 42           |
| 1932..... | 32                            | 31           | 31                | 24              | 18                            | 26               | 23           |
| 1933..... | 38                            | 35           | 36                | 29              | 26                            | -----            | 31           |
| 1934..... | 43                            | 41           | 43                | 36              | 31                            | 36               | 35           |

Bureau of Agricultural Economics; compiled from daily market reports from Bureau representatives in the various markets.

TABLE 217.—*Lettuce: Car-lot shipments, by State of origin, 1923-34*

| State               | Crop-movement season <sup>1</sup> |             |             |             |             |             |             |             |             |             |             |                   |
|---------------------|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|
|                     | 1923                              | 1924        | 1925        | 1926        | 1927        | 1928        | 1929        | 1930        | 1931        | 1932        | 1933        | 1934 <sup>2</sup> |
|                     | <i>Cars</i>                       | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i>       |
| New York.....       | 3,817                             | 3,698       | 3,821       | 3,019       | 3,496       | 3,140       | 3,704       | 3,219       | 3,291       | 2,500       | 1,266       | 898               |
| New Jersey.....     | 456                               | 416         | 463         | 303         | 308         | 144         | 169         | 27          | 18          | 10          | 1           | -----             |
| North Carolina..... | 718                               | 714         | 537         | 540         | 447         | 477         | 363         | 364         | 498         | 110         | 195         | 44                |
| South Carolina..... | 576                               | 424         | 736         | 872         | 369         | 241         | 310         | 169         | 275         | 46          | 115         | 84                |
| Florida.....        | 2,926                             | 2,490       | 2,190       | 707         | 950         | 880         | 1,117       | 560         | 940         | 440         | 465         | 420               |
| Idaho.....          | 1,241                             | 533         | 500         | 398         | 196         | 72          | 76          | 154         | 180         | 237         | 367         | 482               |
| Colorado.....       | 1,436                             | 1,036       | 3,096       | 2,795       | 2,848       | 2,368       | 2,109       | 1,610       | 1,004       | 598         | 664         | 460               |
| Arizona.....        | 834                               | 1,776       | 2,689       | 4,572       | 7,679       | 9,325       | 9,285       | 8,431       | 7,850       | 7,021       | 7,216       | 6,472             |
| Washington.....     | 1,082                             | 673         | 820         | 904         | 1,151       | 1,240       | 1,747       | 2,230       | 1,778       | 1,595       | 1,466       | 1,427             |
| California.....     | 13,916                            | 17,040      | 20,999      | 25,126      | 28,503      | 32,122      | 33,854      | 38,736      | 35,211      | 34,869      | 30,978      | 33,124            |
| Other States.....   | 791                               | 661         | 658         | 541         | 400         | 319         | 286         | 218         | 151         | 161         | 187         | 281               |
| Total.....          | 27,793                            | 29,461      | 36,509      | 39,277      | 46,346      | 50,328      | 53,020      | 55,718      | 51,199      | 47,587      | 42,940      | 43,692            |

<sup>1</sup> Crop-movement season covers 15 months, from October of the previous year through December of the given year, i. e., 1923 season begins in October 1922 and extends through December 1923.

<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.



TABLE 218.—*Lettuce, commercial crop: Acreage, production, and season average price per crate received by producers, by States; average 1928-32, annual 1933 and 1934*

| Group and State           | Acreage            |                |                | Production                          |                                     |                                     | Price for crop of— |                |                |
|---------------------------|--------------------|----------------|----------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------|----------------|----------------|
|                           | Average<br>1928-32 | 1933           | 1934           | Average<br>1928-32                  | 1933                                | 1934                                | Average<br>1928-32 | 1933           | 1934           |
| <b>Early:<sup>1</sup></b> | <i>Acres</i>       | <i>Acres</i>   | <i>Acres</i>   | <i>1,000<br/>crates<sup>1</sup></i> | <i>1,000<br/>crates<sup>1</sup></i> | <i>1,000<br/>crates<sup>1</sup></i> | <i>Dollars</i>     | <i>Dollars</i> | <i>Dollars</i> |
| Arizona.....              | 14,860             | 12,400         | 11,000         | 1,374                               | 1,178                               | 825                                 | 1.55               | 1.10           | 1.60           |
| California, Imperial..... | 32,370             | 30,000         | 31,500         | 3,870                               | 3,090                               | 3,087                               | 1.71               | 1.35           | 1.30           |
| Florida.....              | 1,910              | 1,650          | 1,800          | 531                                 | 574                                 | 594                                 | 1.35               | .84            | .94            |
| Lettuce.....              | 1,340              | 950            | 1,100          | 314                                 | 280                                 | 260                                 | 1.45               | .96            | 1.12           |
| Escarole.....             | 570                | 700            | 700            | 217                                 | 204                                 | 334                                 | 1.20               | .72            | .80            |
| Texas.....                | 600                | 100            | -----          | 46                                  | 6                                   | -----                               | 1.00               | .50            | -----          |
| <b>Total.....</b>         | <b>49,740</b>      | <b>44,150</b>  | <b>44,300</b>  | <b>5,821</b>                        | <b>4,848</b>                        | <b>3,456</b>                        | <b>1.62</b>        | <b>1.23</b>    | <b>1.31</b>    |
| <b>Second early:</b>      |                    |                |                |                                     |                                     |                                     |                    |                |                |
| Arizona.....              | 15,580             | 13,000         | 14,000         | 1,523                               | 1,339                               | 1,470                               | 1.71               | 1.60           | 1.35           |
| California, other.....    | 29,190             | 27,250         | 27,550         | 3,119                               | 3,134                               | 3,719                               | 1.64               | 1.15           | 2.03           |
| North Carolina.....       | 1,350              | 1,350          | 700            | 136                                 | 101                                 | 42                                  | 1.32               | 1.00           | 2.80           |
| South Carolina.....       | 520                | 400            | 250            | 77                                  | 46                                  | 38                                  | 1.62               | 1.00           | 1.40           |
| <b>Total.....</b>         | <b>46,640</b>      | <b>42,000</b>  | <b>42,500</b>  | <b>4,855</b>                        | <b>4,620</b>                        | <b>5,269</b>                        | <b>1.65</b>        | <b>1.28</b>    | <b>1.84</b>    |
| <b>Intermediate:</b>      |                    |                |                |                                     |                                     |                                     |                    |                |                |
| Idaho.....                | 70                 | 80             | 250            | 10                                  | 12                                  | 50                                  | 1.53               | .75            | 1.25           |
| New Jersey.....           | 1,040              | 1,000          | 900            | 219                                 | 250                                 | 194                                 | 1.53               | 1.10           | 1.10           |
| Oregon.....               | 90                 | 180            | 200            | 8                                   | 15                                  | 15                                  | 1.03               | .60            | .70            |
| Virginia.....             | 230                | 200            | 160            | 43                                  | 35                                  | 24                                  | 1.58               | 1.50           | 1.60           |
| Washington.....           | 2,800              | 4,100          | 4,500          | 3,571                               | 3,779                               | 855                                 | .89                | .60            | .55            |
| <b>Total.....</b>         | <b>4,230</b>       | <b>5,560</b>   | <b>6,010</b>   | <b>3,851</b>                        | <b>3,101</b>                        | <b>1,138</b>                        | <b>1.10</b>        | <b>.76</b>     | <b>.70</b>     |
| <b>Late (sec. 1):</b>     |                    |                |                |                                     |                                     |                                     |                    |                |                |
| California.....           | 11,400             | 9,250          | 16,100         | 1,400                               | 1,304                               | 1,880                               | 1.96               | 1.88           | 1.50           |
| Colorado.....             | 7,860              | 5,630          | 5,480          | 3,800                               | 563                                 | 493                                 | .99                | 1.00           | .80            |
| New Mexico.....           | 220                | 200            | 480            | 18                                  | 19                                  | 43                                  | 1.15               | 1.20           | 1.70           |
| New York.....             | 5,480              | 5,400          | 5,000          | 1,368                               | 837                                 | 1,000                               | 1.31               | .75            | .40            |
| Pennsylvania.....         | 250                | 250            | 250            | 39                                  | 45                                  | 40                                  | 1.44               | .90            | .85            |
| <b>Total.....</b>         | <b>25,210</b>      | <b>20,730</b>  | <b>27,310</b>  | <b>3,625</b>                        | <b>2,768</b>                        | <b>3,556</b>                        | <b>1.50</b>        | <b>1.34</b>    | <b>1.09</b>    |
| <b>Late (sec. 2):</b>     |                    |                |                |                                     |                                     |                                     |                    |                |                |
| California, other.....    | 27,620             | 26,600         | 31,000         | 3,684                               | 3,644                               | 3,999                               | 1.76               | 1.46           | 1.25           |
| Idaho.....                | 350                | 700            | 900            | 55                                  | 126                                 | 180                                 | 1.04               | .90            | .65            |
| New Jersey.....           | 940                | 750            | 700            | 173                                 | 169                                 | 105                                 | 1.60               | .88            | 1.20           |
| Oregon.....               | 120                | 120            | 1,000          | 3,16                                | 18                                  | 170                                 | .96                | .85            | .35            |
| Washington.....           | 420                | 500            | 600            | 3,83                                | 90                                  | 132                                 | 1.10               | .95            | .45            |
| <b>Total.....</b>         | <b>29,450</b>      | <b>28,670</b>  | <b>34,200</b>  | <b>3,401</b>                        | <b>4,047</b>                        | <b>4,596</b>                        | <b>1.73</b>        | <b>1.40</b>    | <b>1.17</b>    |
| <b>Grand total.....</b>   | <b>155,270</b>     | <b>141,110</b> | <b>154,320</b> | <b>39,163</b>                       | <b>37,374</b>                       | <b>39,055</b>                       | <b>1.59</b>        | <b>1.27</b>    | <b>1.35</b>    |

<sup>1</sup> Western crates containing approximately 75 pounds (mostly packed 4 to 6 dozen heads per crate).<sup>2</sup> Season begins in fall of the previous year.<sup>3</sup> Includes some quantities not harvested on account of market conditions: California, Imperial, 300,000 crates in 1934; Colorado, 389,000 crates in 1932; Oregon, late crop, 10,000 crates in 1932; Washington, intermediate crop, 86,000 crates in 1932 and 95,000 in 1933, and late crop, 15,000 in 1932. Price refers to harvested portion of crop.

Bureau of Agricultural Economics; estimates based on returns from crop reporters.

TABLE 219.—*Olives: Production and average price per ton received by producers, California, 1925-34*

| Item  | 1925   | 1926   | 1927   | 1928   | 1929   | 1930   | 1931   | 1932   | 1933   | 1934 <sup>1</sup> |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------------------|
| Production..... short tons.....                         | 14,000 | 12,000 | 21,500 | 23,900 | 21,000 | 20,000 | 16,000 | 22,000 | 14,000 | 16,000            |
| Price..... dollars.....                                 | 60.00  | 80.00  | 80.00  | 80.00  | 75.00  | 70.00  | 46.00  | 29.00  | 58.00  | 68.00             |
| Farm value, basis average price..... 1,000 dollars..... | 840    | 960    | 1,720  | 1,912  | 1,575  | 1,400  | 736    | 638    | 812    | 1,088             |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board. Data for earlier years in 1928 Yearbook, table 165.

TABLE 220.—*Olive oil (including inedible): International trade, average 1925-29, annual 1930-33*

| Country                                     | Calendar year       |                     |                     |                     |                     |                      |                     |                      |                     |                     |
|---|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|---------------------|----------------------|---------------------|---------------------|
|   | Average 1925-29     |                     | 1930                |                     | 1931                |                      | 1932                |                      | 1933 <sup>1</sup>   |                     |
|   | Ex-ports            | Im-ports            | Ex-ports            | Im-ports            | Ex-ports            | Im-ports             | Ex-ports            | Im-ports             | Ex-ports            | Im-ports            |
| <b>PRINCIPAL EXPORTING COUNTRIES</b>        | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i>  | <i>1,000 pounds</i> | <i>1,000 pounds</i>  | <i>1,000 pounds</i> | <i>1,000 pounds</i> |
| Spain.....                                  | 164,975             | 2,235,678           | 0                   | 206,921             | 0                   | 133,805              | 0                   | 95,136               | 0                   | 95,136              |
| Italy.....                                  | 66,494              | 1,769,150           | 698                 | 132,561             | 129,470             | 180,581              | 99,761              | 83,518               | 76,934              | 81,888              |
| Tunis.....                                  | 53,947              | 1,458,100           | 301                 | 151                 | 28,910              | 713                  | 52,792              | 814                  | 136,821             | 36                  |
| Greece.....                                 | 28,599              | <sup>2</sup> 123    | 18,514              | <sup>7</sup> 21,604 | <sup>5</sup> 68,113 | 0                    | 62,060              | 0                    | 62,060              | 0                   |
| Algeria.....                                | 28,466              | 115                 | 54,152              | 79                  | 18,309              | 49                   | 40,282              | 87                   | 18,399              | 1,662               |
| Turkey.....                                 | 18,185              | <sup>4</sup> 198    | 10,452              | <sup>4</sup> 40,254 | <sup>3</sup> 35     | <sup>5</sup> 5,459   | 0                   | 0                    | 0                   | 0                   |
| Syria and Lebanon <sup>2</sup> .....        | 4,283               | 339                 | 6,397               | 413                 | 7,199               | 351                  | <sup>3</sup> 7,258  | <sup>3</sup> 256     | 1,729               | 7,177               |
| Morocco.....                                | 4,206               | 282                 | 3                   | 1,361               | 0                   | 2,762                | 0                   | 1,729                | 2                   | 7,177               |
| Yugoslavia.....                             | 1,077               | 861                 | 322                 | 542                 | 182                 | 402                  | 136                 | 184                  | 234                 | 108                 |
| Total.....                                  | 370,232             | 5,147               | 594,517             | 135,118             | 452,849             | 184,898              | 412,606             | 86,588               | 389,586             | 90,871              |
| <b>PRINCIPAL IMPORTING COUNTRIES</b>        |                     |                     |                     |                     |                     |                      |                     |                      |                     |                     |
| United States.....                          | 0                   | 135,847             | 0                   | 162,860             | 0                   | 119,363              | 0                   | 131,942              | 0                   | 125,337             |
| Argentina.....                              | 0                   | 95,334              | 0                   | 130,715             | 0                   | 91,782               | 0                   | 79,956               | 0                   | 83,183              |
| France.....                                 | 13,958              | 40,146              | 25,446              | 72,390              | 22,389              | 46,792               | 20,238              | 55,635               | 23,184              | 61,095              |
| United Kingdom.....                         | 324                 | 19,100              | 269                 | 21,179              | 208                 | 19,604               | 390                 | 24,344               | 0                   | 26,871              |
| Cuba.....                                   | 0                   | 16,654              | 0                   | 20,983              | 0                   | 14,490               | 0                   | 17,643               | 0                   | 0                   |
| Chile.....                                  | 0                   | 14,103              | 0                   | 6,741               | 21                  | 5,288                | 4                   | 1,758                | 0                   | 804                 |
| Uruguay.....                                | 0                   | 13,410              | 0                   | 18,753              | 0                   | <sup>15</sup> 15,115 | 0                   | <sup>10</sup> 10,632 | 0                   | 0                   |
| Brazil.....                                 | 0                   | 12,808              | 0                   | 18,399              | 0                   | 5,848                | 0                   | 11,595               | 0                   | 10,695              |
| Norway.....                                 | 0                   | 7,098               | 0                   | 5,882               | 0                   | 2,960                | 0                   | 8,500                | 0                   | 7,100               |
| Macao (Portuguese China) <sup>3</sup> ..... | <sup>4</sup> 2,331  | <sup>4</sup> 6,813  | 998                 | 5,151               | 796                 | 4,642                | 0                   | 0                    | 0                   | 0                   |
| Portugal.....                               | 5,722               | 6,659               | 8,020               | 26,510              | 3,979               | 7,005                | 8,671               | 3,271                | 0                   | 0                   |
| Palestine.....                              | 710                 | 5,726               | 1,147               | 2,148               | 1,762               | 94                   | 1,576               | 1,062                | 0                   | 0                   |
| Canada.....                                 | 0                   | 4,044               | 0                   | 6,487               | 0                   | 5,590                | 0                   | 5,153                | 0                   | 4,092               |
| Switzerland.....                            | 2                   | 3,443               | 0                   | 4,847               | 9                   | 4,096                | 9                   | 4,651                | 7                   | 5,379               |
| Egypt.....                                  | 32                  | 2,666               | 24                  | 3,907               | 9                   | 2,394                | 6                   | 2,875                | 0                   | 2,798               |
| Germany.....                                | 53                  | 2,631               | 50                  | 3,393               | 145                 | 2,955                | 41                  | 3,028                | 36                  | 3,065               |
| Mexico.....                                 | 0                   | 2,230               | 0                   | 3,827               | 0                   | 2,136                | 0                   | <sup>2</sup> 2,853   | 0                   | 0                   |
| Rumania.....                                | 1                   | 1,871               | 0                   | 1,649               | 0                   | 1,171                | 0                   | 1,264                | 0                   | 0                   |
| Australia <sup>2</sup> .....                | 1                   | 1,545               | 2                   | 2,630               | 1                   | 1,484                | 0                   | 2,295                | 0                   | 0                   |
| Belgium.....                                | 38                  | 1,319               | 22                  | 1,671               | 13                  | 1,292                | 11                  | 1,344                | 8                   | 1,283               |
| Peru.....                                   | 0                   | 1,272               | 0                   | 1,188               | 15                  | 836                  | 3                   | 854                  | 0                   | 0                   |
| Bulgaria.....                               | 0                   | 1,227               | 0                   | 507                 | 0                   | 496                  | 0                   | 434                  | 0                   | 195                 |
| Czechoslovakia.....                         | 24                  | 958                 | 2                   | 1,208               | 0                   | 1,187                | 0                   | 1,279                | 0                   | 1,109               |
| Sweden <sup>4</sup> .....                   | 4                   | 454                 | 3                   | 840                 | 29                  | 656                  | 3                   | 748                  | 41                  | 778                 |
| Philippine Islands.....                     | 0                   | 312                 | 0                   | 262                 | 0                   | 346                  | 0                   | 339                  | 0                   | 0                   |
| Netherlands.....                            | 7                   | 181                 | 16                  | 280                 | 13                  | 278                  | 29                  | 424                  | 6                   | 323                 |
| New Zealand.....                            | 0                   | 173                 | 0                   | 312                 | 0                   | 189                  | 0                   | 291                  | 0                   | 302                 |
| Denmark.....                                | 6                   | 154                 | 5                   | 341                 | 3                   | 264                  | 2                   | 198                  | 4                   | 203                 |
| Total.....                                  | 23,208              | 398,178             | 36,004              | 524,890             | 29,397              | 358,269              | 80,983              | 374,363              | 23,286              | 334,592             |

<sup>1</sup> Preliminary.<sup>2</sup> 2-year average.<sup>3</sup> International Yearbook of Agricultural Statistics.<sup>4</sup> 4-year average.<sup>5</sup> Beginning 1931, includes sesame oil.Bureau of Agricultural Economics; official sources except where otherwise noted  
Conversions made on the basis of 7.5 pounds to the gallon.

TABLE 221.—Onions, commercial crop: Acreage, production, and season average price per bushel received by producers, by States; average 1928-32, annual 1933 and 1934

| Group and State                       | Acreage            |              |                     | Production                         |                                    |                                    | Price for crop of— |                |                |
|---------------------------------------|--------------------|--------------|---------------------|------------------------------------|------------------------------------|------------------------------------|--------------------|----------------|----------------|
|                                       | Average<br>1928-32 | 1933         | 1934                | Average<br>1928-32                 | 1933                               | 1934                               | Average<br>1928-32 | 1933           | 1934           |
| <b>Early (Bermuda):</b>               | <i>Acres</i>       | <i>Acres</i> | <i>Acres</i>        | <i>1,000<br/>sacks<sup>1</sup></i> | <i>1,000<br/>sacks<sup>1</sup></i> | <i>1,000<br/>sacks<sup>1</sup></i> | <i>Dollars</i>     | <i>Dollars</i> | <i>Dollars</i> |
| Louisiana <sup>2</sup> .....          | 1,610              | 500          | 550                 | 86                                 | 18                                 | 16                                 | 2.03               | 1.75           | 1.00           |
| Texas.....                            | 18,540             | 18,000       | 21,700              | 3 1,847                            | 1,170                              | 3 1,562                            | 1.83               | 1.05           | 1.10           |
| California.....                       | 2,630              | 1,150        | 1,850               | 3 337                              | 167                                | 204                                | 1.84               | 1.85           | 1.65           |
| Total.....                            | 22,780             | 19,650       | 24,100              | 3 2,270                            | 1,355                              | 3 1,782                            | 1.84               | 1.16           | 1.17           |
| <b>Intermediate (domestic):</b>       |                    |              |                     |                                    |                                    |                                    |                    |                |                |
| New Jersey.....                       | 2,460              | 3,600        | 3,500               | 338                                | 540                                | 500                                | 1.65               | 1.35           | 1.70           |
| Virginia.....                         | 570                | 550          | 650                 | 45                                 | 38                                 | 53                                 | 1.39               | 2.20           | 1.35           |
| Kentucky.....                         | 540                | 340          | 350                 | 69                                 | 36                                 | 30                                 | .96                | 1.50           | 1.35           |
| Texas, north.....                     | 1,820              | 1,800        | 2,600               | 244                                | 225                                | 390                                | 1.71               | 1.80           | 1.80           |
| Iowa, Scott County district.....      | 1,030              | 1,000        | 950                 | 156                                | 130                                | 43                                 | 1.45               | 1.30           | 1.40           |
| Washington, Walla Walla district..... | 780                | 660          | 900                 | 195                                | 152                                | 266                                | .84                | .70            | .80            |
| California.....                       | 1,130              | 1,150        | 2,140               | 3 290                              | 345                                | 439                                | .88                | 1.35           | 1.10           |
| Total.....                            | 8,330              | 9,100        | 11,090              | 3 1,337                            | 1,466                              | 1,786                              | 1.29               | 1.37           | 1.42           |
| <b>Late (domestic):<sup>4</sup></b>   |                    |              |                     |                                    |                                    |                                    |                    |                |                |
| <b>Eastern:</b>                       |                    |              |                     |                                    |                                    |                                    |                    |                |                |
| Massachusetts.....                    | 2,900              | 3,300        | 2,900               | 606                                | 693                                | 783                                | 1.32               | 1.25           | 1.15           |
| New York.....                         | 7,740              | 8,600        | 9,000               | 1,663                              | 2,021                              | 2,475                              | 1.27               | 1.25           | 1.10           |
| Pennsylvania.....                     | 330                | 290          | 330                 | 51                                 | 38                                 | 53                                 | 1.43               | 1.25           | 1.15           |
| Total.....                            | 10,990             | 12,190       | 12,230              | 2,320                              | 2,752                              | 3,311                              | 1.27               | 1.25           | 1.11           |
| <b>Central:</b>                       |                    |              |                     |                                    |                                    |                                    |                    |                |                |
| Ohio.....                             | 5,300              | 4,610        | 4,200               | 710                                | 567                                | 504                                | 1.22               | 1.05           | 1.20           |
| Indiana.....                          | 8,470              | 7,000        | 5,100               | 1,410                              | 756                                | 484                                | 1.20               | .95            | 1.25           |
| Illinois.....                         | 750                | 750          | 400                 | 101                                | 64                                 | 32                                 | 1.39               | 1.50           | 1.25           |
| Michigan.....                         | 6,590              | 7,600        | 8,720               | 1,124                              | 1,520                              | 1,918                              | 1.19               | 1.05           | 1.20           |
| Wisconsin.....                        | 1,030              | 1,150        | 1,000               | 173                                | 167                                | 205                                | 1.21               | 1.05           | 1.05           |
| Minnesota.....                        | 2,170              | 2,250        | 1,200               | 387                                | 484                                | 126                                | 1.15               | .90            | 1.40           |
| Iowa, other.....                      | 1,710              | 1,120        | 700                 | 3 293                              | 134                                | 63                                 | 1.17               | .95            | 1.55           |
| Total.....                            | 26,520             | 24,480       | 21,320              | 3 4,198                            | 3,692                              | 3,332                              | 1.19               | 1.01           | 1.21           |
| <b>Western:</b>                       |                    |              |                     |                                    |                                    |                                    |                    |                |                |
| Idaho.....                            | 1,360              | 1,550        | 2,350               | 3 381                              | 395                                | 811                                | 1.09               | .75            | .75            |
| Colorado.....                         | 5,220              | 4,150        | 4,440               | 3 924                              | 652                                | 533                                | 1.11               | .80            | .88            |
| Utah.....                             | 1,020              | 900          | 750                 | 253                                | 104                                | 221                                | 1.02               | 1.15           | .95            |
| Nevada.....                           | 160                | 170          | 150                 | 3 28                               | 15                                 | 14                                 | 3 .91              | 1.00           | .80            |
| Washington, other.....                | 880                | 1,000        | 1,200               | 230                                | 260                                | 306                                | 1.04               | .85            | .80            |
| Oregon.....                           | 1,130              | 1,650        | 1,800               | 275                                | 462                                | 432                                | 1.23               | .85            | .90            |
| California.....                       | 5,790              | 4,530        | 3,260               | 3 999                              | 824                                | 561                                | 1.34               | .90            | 1.05           |
| Total.....                            | 15,530             | 13,950       | 13,950              | 3 3,084                            | 2,802                              | 2,873                              | 1.18               | .83            | .88            |
| Total, late.....                      | 53,040             | 50,620       | 47,500              | 3 9,602                            | 9,246                              | 9,521                              | 1.21               | 1.03           | 1.08           |
| Grand total.....                      | 84,150             | 79,370       | 82,690 <sup>3</sup> | 13,209                             | 12,067 <sup>3</sup>                | 13,089                             | 1.31               | 1.09           | 1.14           |

<sup>1</sup> Sacks containing 100 pounds.<sup>2</sup> Includes a small acreage of Creole onions.<sup>3</sup> Includes some quantities not harvested on account of market conditions: Early California, 88,000 sacks in 1928 and 25,000 in 1932; Texas, 363,000 sacks in 1931 and 188,000 in 1934; intermediate-California, 116,000 sacks in 1932; late-California, 43,000 sacks in 1930 and 259,000 in 1932; Colorado, 83,000 sacks in 1929 and 99,000 in 1932; Idaho, 97,000 sacks in 1932; Iowa, 6,000 sacks in 1932.<sup>4</sup> Average price for late States is computed only to Dec. 1.<sup>5</sup> Short-time average.

Bureau of Agricultural Economics; estimates based on returns from crop reporters.

TABLE 222.—Onions: Car-lot shipments, by State of origin, 1923-24 to 1933-34

| State              | Crop-movement season <sup>1</sup> |             |             |             |             |             |             |             |             |             |                      |
|--------------------|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------|
|                    | 1923-24                           | 1924-25     | 1925-26     | 1926-27     | 1927-28     | 1928-29     | 1929-30     | 1930-31     | 1931-32     | 1932-33     | 1933-34 <sup>2</sup> |
|                    | <i>Cars</i>                       | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i>          |
| Massachusetts..... | 2,454                             | 2,481       | 2,856       | 3,586       | 2,495       | 1,416       | 1,854       | 1,474       | 1,360       | 597         | 599                  |
| New York.....      | 5,505                             | 5,335       | 5,109       | 3,720       | 4,102       | 1,807       | 3,985       | 4,226       | 3,272       | 2,570       | 2,931                |
| New Jersey.....    | 385                               | 403         | 235         | 253         | 235         | 533         | 239         | 193         | 219         | 105         | 191                  |
| Ohio.....          | 2,714                             | 4,492       | 1,856       | 2,287       | 4,070       | 1,774       | 2,988       | 2,263       | 1,341       | 1,391       | 959                  |
| Indiana.....       | 4,610                             | 3,735       | 4,158       | 4,493       | 5,000       | 3,939       | 5,185       | 6,879       | 2,750       | 4,378       | 1,827                |
| Illinois.....      | 378                               | 241         | 291         | 158         | 142         | 150         | 142         | 193         | 69          | 155         | 40                   |
| Michigan.....      | 1,222                             | 1,623       | 1,402       | 2,171       | 2,653       | 2,664       | 2,964       | 5,499       | 2,800       | 4,776       | 4,913                |
| Wisconsin.....     | 273                               | 212         | 361         | 270         | 279         | 294         | 241         | 219         | 199         | 236         | 175                  |
| Minnesota.....     | 189                               | 487         | 674         | 684         | 1,259       | 1,077       | 1,448       | 1,141       | 740         | 1,527       | 1,710                |
| Iowa.....          | 882                               | 1,176       | 1,365       | 1,434       | 1,333       | 1,430       | 1,492       | 1,762       | 789         | 1,031       | 708                  |
| Virginia.....      | 274                               | 345         | 138         | 178         | 131         | 178         | 234         | 109         | 147         | 61          | 38                   |
| Kentucky.....      | 263                               | 266         | 152         | 134         | 145         | 69          | 59          | 12          | 38          | 13          | 43                   |
| Texas.....         | 3,027                             | 3,918       | 3,941       | 5,316       | 4,028       | 7,081       | 7,232       | 6,312       | 5,718       | 8,341       | 4,924                |
| Idaho.....         | 256                               | 322         | 876         | 531         | 891         | 1,152       | 731         | 677         | 1,315       | 299         | 1,088                |
| Colorado.....      | 928                               | 1,064       | 1,809       | 1,758       | 1,460       | 2,244       | 4,042       | 2,124       | 1,482       | 1,593       | 1,723                |
| Utah.....          | 177                               | 216         | 599         | 662         | 654         | 1,029       | 950         | 551         | 495         | 472         | 472                  |
| Washington.....    | 1,126                             | 1,016       | 1,000       | 1,200       | 1,302       | 1,153       | 1,417       | 1,464       | 1,299       | 645         | 986                  |
| Oregon.....        | 392                               | 558         | 681         | 678         | 671         | 663         | 660         | 730         | 1,062       | 1,519       | 1,365                |
| California.....    | 4,145                             | 2,671       | 3,603       | 3,013       | 3,763       | 4,492       | 4,144       | 4,062       | 3,384       | 1,964       | 3,044                |
| Other States.....  | 330                               | 235         | 540         | 536         | 499         | 351         | 264         | 147         | 328         | 182         | 150                  |
| Total.....         | 29,480                            | 30,796      | 31,646      | 33,062      | 35,192      | 33,326      | 40,281      | 40,067      | 28,807      | 31,361      | 27,842               |

<sup>1</sup> Crop-movement season covers 16 months, from March of one year through June of the following year.<sup>2</sup> Preliminary.<sup>3</sup> Includes 1 car in July 1933.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

TABLE 223.—Onions: Average l. c. l. price per 100 pounds to jobbers, New York and Chicago, 1925-26 to 1934-35

| Market and season | Bermuda varieties |                   |        |                   |        |                   | Various common varieties |        |           |         |          |          |         |          |       |      |  |  |
|-------------------|-------------------|-------------------|--------|-------------------|--------|-------------------|--------------------------|--------|-----------|---------|----------|----------|---------|----------|-------|------|--|--|
|                   | April             |                   | May    |                   | June   |                   |                          |        |           |         |          |          |         |          |       |      |  |  |
|                   | Yellow            | Crystal White Wax | Yellow | Crystal White Wax | Yellow | Crystal White Wax | July                     | August | September | October | November | December | January | February | March |      |  |  |
|                   |                   |                   |        |                   |        |                   |                          |        |           |         |          |          |         |          |       |      |  |  |
| New York:         | Dol.              | Dol.              | Dol.   | Dol.              | Dol.   | Dol.              | Dol.                     | Dol.   | Dol.      | Dol.    | Dol.     | Dol.     | Dol.    | Dol.     | Dol.  | Dol. |  |  |
| 1925-26           | 4.19              | 5.04              | 6.16   | 5.01              | 7.18   | ---               | 5.27                     | 2.94   | 2.36      | 2.86    | 2.80     | 3.26     | 2.95    | 2.69     | 2.81  | 2.81 |  |  |
| 1926-27           | ---               | ---               | 4.37   | ---               | 3.27   | ---               | 2.58                     | 2.26   | 1.59      | 1.82    | 1.92     | 2.74     | 3.08    | 2.76     | 3.46  | 2.81 |  |  |
| 1927-28           | 5.36              | ---               | 5.64   | ---               | 6.64   | ---               | 2.90                     | 2.17   | 1.72      | 1.60    | 1.72     | 2.18     | 2.60    | 2.89     | 4.25  | 4.25 |  |  |
| 1928-29           | 5.38              | 6.17              | 3.14   | 3.33              | 2.37   | 2.00              | 2.15                     | 2.62   | 3.53      | 3.62    | 4.14     | 4.42     | 4.88    | 5.42     | 4.67  | 4.67 |  |  |
| 1929-30           | 4.47              | ---               | 3.10   | ---               | 3.50   | ---               | 3.03                     | 2.31   | 2.02      | 1.91    | 1.86     | 2.28     | 2.23    | 2.37     | 2.11  | 2.11 |  |  |
| 1930-31           | 3.40              | 4.05              | 2.60   | ---               | 2.98   | ---               | 2.25                     | 1.88   | 1.70      | 1.53    | 1.63     | 1.55     | 1.28    | 1.32     | 1.47  | 1.47 |  |  |
| 1931-32           | ---               | ---               | ---    | ---               | 3.20   | ---               | 1.73                     | 2.14   | 2.55      | 2.73    | 2.97     | 3.85     | 4.58    | 4.58     | 6.38  | 6.38 |  |  |
| 1932-33           | 6.52              | ---               | 2.78   | 2.71              | 1.69   | ---               | 1.49                     | 1.17   | 1.27      | 1.41    | 1.29     | 1.26     | 1.37    | 1.41     | 1.45  | 1.45 |  |  |
| 1933-34           | 2.27              | ---               | 2.42   | ---               | 3.38   | ---               | 2.22                     | 2.30   | 2.08      | 2.16    | 2.20     | 2.77     | 2.94    | 3.12     | 2.71  | 2.71 |  |  |
| 1934-35           | 2.99              | 3.11              | 1.87   | 1.97              | 3.18   | 3.20              | 2.71                     | 2.83   | 2.42      | 2.25    | 2.54     | 2.52     | ---     | ---      | ---   | ---  |  |  |
| Chicago:          |                   |                   |        |                   |        |                   |                          |        |           |         |          |          |         |          |       |      |  |  |
| 1925-26           | 4.15              | 5.46              | 6.33   | 6.75              | 7.94   | 8.39              | 4.94                     | 3.41   | 2.90      | 3.11    | 3.35     | 3.46     | 3.20    | 2.81     | 3.18  | 3.18 |  |  |
| 1926-27           | 5.60              | 5.92              | 3.97   | 4.71              | 3.21   | 3.61              | 2.34                     | 2.25   | 2.07      | 1.92    | 1.69     | 2.46     | 3.81    | 3.42     | 3.92  | 3.92 |  |  |
| 1927-28           | 5.27              | 5.96              | 5.66   | 6.15              | 5.57   | 6.07              | 3.31                     | 2.57   | 1.74      | 1.68    | 1.65     | 2.02     | 2.77    | 2.78     | 4.04  | 4.04 |  |  |
| 1928-29           | 4.57              | 5.23              | 3.04   | 3.17              | 2.31   | 2.64              | 2.25                     | 2.72   | 3.35      | 3.66    | 4.22     | 4.59     | 5.27    | 5.39     | 5.26  | 5.26 |  |  |
| 1929-30           | 4.07              | 5.22              | 3.06   | 3.33              | 3.45   | 4.42              | 3.60                     | 3.08   | 2.44      | 2.12    | 2.20     | 2.29     | 2.89    | 2.18     | 1.73  | 1.73 |  |  |
| 1930-31           | 3.87              | 4.55              | 2.78   | 3.15              | 3.02   | 3.48              | 2.98                     | 2.12   | 1.80      | 1.14    | 1.89     | 1.47     | 1.61    | 1.27     | 1.60  | 1.60 |  |  |
| 1931-32           | ---               | ---               | 3.26   | 3.71              | 2.93   | 3.14              | 2.24                     | 2.43   | 2.74      | 2.94    | 2.76     | 3.57     | 4.65    | 5.14     | 6.86  | 6.86 |  |  |
| 1932-33           | 6.66              | 7.16              | 2.42   | 2.60              | 1.63   | 1.84              | ---                      | 1.23   | 1.29      | 1.09    | 1.00     | 1.06     | 1.06    | 1.04     | 1.16  | 1.16 |  |  |
| 1933-34           | 2.49              | 2.51              | 2.38   | 2.57              | 2.88   | 2.92              | 2.72                     | 2.50   | 2.14      | 1.72    | 1.80     | 2.08     | 3.11    | 3.12     | 2.46  | 2.46 |  |  |
| 1934-35           | 2.59              | 3.02              | 2.04   | 2.11              | 2.76   | 2.84              | 2.75                     | 2.61   | 1.90      | 1.82    | 2.22     | 2.05     | ---     | ---      | ---   | ---  |  |  |

<sup>1</sup> No quotations for U. S. No. 1 grade; prices shown are for U. S. Commercial grade which is not comparable with U. S. No. 1.<sup>2</sup> Car-lot sales

Bureau of Agricultural Economics; compiled from daily market reports from Bureau representatives in the markets.

Average prices as shown are based on stock of U. S. No. 1 grade, except as otherwise stated; they are simple averages of daily range of selling prices. In some cases conversions have been made from larger to smaller units or vice versa in order to obtain comparability.

TABLE 224.—*Peaches: Total production, average price per bushel received by producers, and exports of the United States, 1919-34*<sup>1</sup>

| Year                    | Production          | Price <sup>2</sup> | Farm value, basis average price | Domestic exports, year beginning July <sup>3</sup> |              |                     |                         |                          |
|-------------------------|---------------------|--------------------|---------------------------------|--|--------------|---------------------|-------------------------|--------------------------|
|                         |                     |                    |                                 | Fresh  | Dried        | Canned <sup>4</sup> | Total in terms of fresh | Percentage of production |
|                         | 1,000 bushels       | Dollars            | 1,000 dollars                   | 1,000 pounds                                       | 1,000 pounds | 1,000 pounds        | 1,000 bushels           | Percent                  |
| 1919.....               | 50,686              |                    |                                 |  |              |                     |                         |                          |
| 1919.....               | 51,756              | 1.89               | 98,061                          |  | 12,756       |                     | 1,399                   | 2.7                      |
| 1920.....               | 44,541              | 2.04               | 90,734                          |  | 3,573        |                     | 392                     | .9                       |
| 1921.....               | 32,813              | 1.48               | 48,539                          | <sup>5</sup> 611                                   | 6,260        |                     | 699                     | 2.1                      |
| 1922.....               | 57,476              | 1.33               | 76,425                          | 13,170   | 5,585        | 54,624              | 3,163                   | 5.5                      |
| 1923.....               | 44,781              | 1.37               | 61,187                          | 15,065   | 12,975       | 50,374              | 3,835                   | 8.6                      |
| 1924.....               | 47,755              |                    |                                 |  |              |                     |                         |                          |
| 1924.....               | 51,146              | 1.24               | 63,365                          | 16,172   | 4,665        | 57,390              | 3,240                   | 6.3                      |
| 1925.....               | 44,335              | 1.36               | 60,530                          | 15,749   | 3,351        | 89,160              | 4,161                   | 9.4                      |
| 1926.....               | <sup>6</sup> 64,799 | .99                | 62,809                          | 14,453   | 6,968        | 81,896              | 4,477                   | 6.9                      |
| 1927.....               | <sup>6</sup> 41,601 | 1.16               | 45,259                          | 17,969   | 6,542        | 86,634              | 4,701                   | 11.3                     |
| 1928.....               | <sup>6</sup> 64,501 | .97                | 58,578                          | 22,067   | 12,436       | 101,438             | 6,050                   | 9.4                      |
| 1929.....               | 42,827              |                    |                                 |  |              |                     |                         |                          |
| 1929.....               | 44,434              | 1.37               | 60,855                          | 19,973   | 3,847        | 74,470              | 3,941                   | 8.9                      |
| 1930.....               | <sup>6</sup> 54,186 | .88                | 43,895                          | 12,859   | 8,482        | 75,763              | 4,355                   | 8.0                      |
| 1931.....               | <sup>6</sup> 76,689 | .56                | 40,984                          | 10,731   | 8,490        | 66,300              | 3,917                   | 5.1                      |
| 1932.....               | <sup>6</sup> 42,443 | .53                | 18,838                          | 3,298  | 7,649        | 74,999              | 4,032                   | 9.5                      |
| 1933.....               | <sup>6</sup> 44,692 | .76                | 32,340                          | 3,371  | 7,569        | 81,464              | 4,224                   | 9.5                      |
| 1934 <sup>7</sup> ..... | <sup>6</sup> 45,404 | .80                | 34,770                          |  |              |                     |                         |                          |

<sup>1</sup> Dried peaches converted to terms of fresh on the basis that dried peaches equal 19 percent of fresh. Canned peaches converted to terms of fresh on the basis that 24 pounds of fresh equal 1 dozen cans of 1 pound each; 48 pounds of fresh equals 1 bushel. In practice, 1 bushel of fresh fruit is figured as the equivalent of 2 dozen cans of 1 pound each. No reexports reported.

<sup>2</sup> From 1919 to 1922, Sept. 15 price; 1923-25, Sept. 15 price in North, Aug. 15 price in South; 1926-34, average price for the crop-marketing season.

<sup>3</sup> Compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1919-26, January and June issues, 1927-34.

<sup>4</sup> Canned peaches were reported in value only, prior to July 1, 1922.

<sup>5</sup> No exports reported prior to Jan. 1, 1922; figures for 1921 represent exports Jan. 1, 1922, to June 30, 1922.

<sup>6</sup> Includes some quantities not harvested on account of market conditions as follows: 1,297,000 bushels in 1926; 2,709,000 in 1927; 3,842,000 in 1928; 10,639,000 in 1930, including 6,180,000 sold but left on the trees; 8,063,000 in 1931, including 3,938,000 sold but left on the trees; 6,710,000 in 1932; 3,647,000 in 1933, including 1,480,000 sold but left on the trees, and 2,208,000 in 1934. Values are based on the quantity actually harvested plus a quantity of fruit that was sold but left on the trees in 1930, 1931, and 1933.

<sup>7</sup> Preliminary.

Bureau of Agricultural Economics; production figures are estimates of the Crop Reporting Board, revised. Italian figures are census returns. Prices based upon returns from crop reporters.

TABLE 225.—*Peaches: Production and average price per bushel received by producers, by States, average 1927-31, and annual 1933 and 1934*

| State and<br>division | Production                   |                          |                          | Price for<br>crop of— |             | State and<br>division   | Production                   |                          |                          | Price for<br>crop of— |             |
|-----------------------|------------------------------|--------------------------|--------------------------|-----------------------|-------------|-------------------------|------------------------------|--------------------------|--------------------------|-----------------------|-------------|
|                       | Aver-<br>age,<br>1927-<br>31 | 1933                     | 1934 <sup>1</sup>        | 1933                  | 1934        |                         | Aver-<br>age,<br>1927-<br>31 | 1933                     | 1934 <sup>1</sup>        | 1933                  | 1934        |
|                       |                              |                          |                          |                       |             |                         |                              |                          |                          |                       |             |
|                       | <i>1,000<br/>bushels</i>     | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>Dol.</i>           | <i>Dol.</i> |                         | <i>1,000<br/>bushels</i>     | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>Dol.</i>           | <i>Dol.</i> |
| N. H.-----            | 19                           | 18                       | -----                    | 1.50                  | -----       | Ky.-----                | 591                          | 216                      | 434                      | 1.05                  | 1.00        |
| Mass-----             | 141                          | 134                      | 2                        | 1.40                  | 1.75        | Tenn-----               | 1,459                        | 580                      | 2,325                    | .95                   | .80         |
| R. I.-----            | 30                           | 26                       | 2                        | 1.45                  | 1.75        | Ala-----                | 976                          | 908                      | 1,089                    | .80                   | .75         |
| Conn-----             | 195                          | 172                      | 2                        | 1.30                  | 2.00        | Miss-----               | 648                          | 494                      | 781                      | 1.00                  | .75         |
| N. Y-----             | 1,472                        | 1,092                    | 41                       | 1.10                  | 2.15        | Ark-----                | 1,047                        | 672                      | 1,848                    | 1.10                  | .75         |
| N. J-----             | 1,727                        | 987                      | 22                       | 1.10                  | 2.35        | La-----                 | 191                          | 158                      | 198                      | 1.10                  | .75         |
| Pa-----               | 1,568                        | 1,144                    | 442                      | 1.20                  | 1.85        | Okla-----               | 545                          | 108                      | 612                      | 1.20                  | .85         |
| N. Atlantic-----      | 5,151                        | 3,573                    | 511                      | 1.16                  | 1.90        | Tex-----                | 1,384                        | 782                      | 1,287                    | 1.30                  | 1.10        |
| Ohio-----             | 1,142                        | 456                      | 228                      | 1.45                  | 1.80        | S. Central-----         | 7,441                        | 3,918                    | 8,574                    | 1.04                  | .84         |
| Ind-----              | 700                          | 221                      | 192                      | 1.35                  | 1.45        | Idaho-----              | 135                          | 51                       | 93                       | 1.45                  | 1.15        |
| Ill-----              | 1,893                        | 1,522                    | 528                      | 1.20                  | 1.40        | Colo-----               | 906                          | 578                      | 1,260                    | 1.30                  | 1.00        |
| Mich-----             | 1,175                        | 215                      | 423                      | 1.75                  | 1.75        | N. Mex-----             | 78                           | 13                       | 123                      | 1.75                  | 1.20        |
| Iowa-----             | 64                           | 7                        | 53                       | 1.55                  | 1.10        | Ariz-----               | 73                           | 67                       | 48                       | 1.75                  | 1.60        |
| Mo-----               | 621                          | 204                      | 468                      | 1.15                  | 1.00        | Utah-----               | 587                          | 62                       | 558                      | 1.40                  | .85         |
| Nebr-----             | 43                           | 4                        | 5                        | 1.70                  | 1.25        | Nev-----                | 5                            | 2                        | 6                        | 1.75                  | 1.40        |
| Kans-----             | 175                          | 14                       | 90                       | 1.65                  | 1.10        | Wash-----               | 927                          | 240                      | 1,200                    | 1.25                  | .75         |
| N. Central. --        | 5,814                        | 2,643                    | 1,987                    | 1.30                  | 1.41        | Oreg-----               | 241                          | 227                      | 314                      | 1.15                  | 1.05        |
| Del-----              | 301                          | 205                      | 64                       | 1.25                  | 1.25        | Calif-----              | 223,294                      | 222,085                  | 220,480                  | .48                   | .63         |
| Md-----               | 514                          | 400                      | 82                       | 1.00                  | 1.70        | Clingstone <sup>2</sup> | 15,460                       | 214,626                  | 113,501                  | .44                   | .64         |
| Va-----               | 858                          | 990                      | 414                      | 1.10                  | 1.40        | Freestone <sup>4</sup>  | 7,834                        | 7,459                    | 6,959                    | .54                   | .60         |
| W. Va-----            | 494                          | 396                      | 110                      | 1.15                  | 1.70        | Western-----            | 26,245                       | 23,325                   | 24,062                   | .53                   | .67         |
| N. Car-----           | 1,857                        | 2,112                    | 2,312                    | .85                   | 1.00        | United States           | 56,282                       | 44,692                   | 45,404                   | .76                   | .80         |
| S. Car-----           | 1,172                        | 1,633                    | 1,610                    | .85                   | .80         |                         |                              |                          |                          |                       |             |
| Ga-----               | 6,363                        | 5,440                    | 5,610                    | .75                   | .80         |                         |                              |                          |                          |                       |             |
| Fla-----              | 73                           | 57                       | 68                       | .90                   | .75         |                         |                              |                          |                          |                       |             |
| S. Atlantic-----      | 11,632                       | 11,233                   | 10,270                   | .85                   | .89         |                         |                              |                          |                          |                       |             |

<sup>1</sup> Preliminary.<sup>2</sup> Includes some quantities not harvested on account of market conditions as follows: 1927, 2,709,000 bushels of clingstone; 1928, 2,917,000 of clingstone in California and 925,000 bushels in Georgia; 1930, 10,139,000 of clingstone, including 6,180,000 sold but left on the trees and 500,000 of freestone; 1931, 8,063,000 of clingstone, including 3,938,000 sold but left on the trees; 1933, 3,647,000 of clingstone, including 1,480,000 sold but left on the trees; 1934, 2,208,000 of clingstone. Prices and value are computed on the quantity actually harvested, plus a quantity of fruit that was sold but left on the trees in 1930, 1931, and 1933.<sup>3</sup> Mainly for canning.<sup>4</sup> Mainly for drying.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 226.—*Peaches: Car-lot shipments, United States, by months, 1925-34*

| Season                  | May         | June        | July        | August      | September   | October <sup>1</sup> | Total       |
|-------------------------|-------------|-------------|-------------|-------------|-------------|----------------------|-------------|
|                         | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i>          | <i>Cars</i> |
| 1925.....               | 328         | 4,951       | 17,932      | 9,921       | 7,420       | 306                  | 40,858      |
| 1926.....               | 52          | 2,209       | 21,793      | 24,538      | 8,847       | 1,026                | 58,465      |
| 1927.....               | 267         | 5,638       | 12,464      | 13,217      | 9,739       | 178                  | 41,503      |
| 1928.....               | 12          | 1,755       | 23,122      | 22,822      | 8,802       | 462                  | 56,975      |
| 1929.....               | 106         | 2,374       | 10,429      | 14,012      | 8,308       | 222                  | 35,451      |
| 1930.....               | 18          | 2,515       | 12,956      | 15,526      | 7,333       | 142                  | 38,490      |
| 1931.....               | 47          | 2,045       | 15,765      | 23,782      | 4,283       | 148                  | 46,070      |
| 1932.....               | 7           | 357         | 3,796       | 10,690      | 5,383       | 525                  | 20,751      |
| 1933.....               | 7           | 1,476       | 9,161       | 10,388      | 7,183       | 48                   | 28,263      |
| 1934 <sup>2</sup> ..... | 54          | 1,675       | 11,656      | 12,831      | 356         | 9                    | 20,581      |

<sup>1</sup> Figures include shipments in November as follows: 1926, 5 cars; 1932, 3 cars.<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included. See 1927 Yearbook, p. 855, for data for earlier years.

TABLE 227.—*Peaches: Car-lot shipments, by State of origin, 1925-34<sup>1</sup>*

| State               | 1925        | 1926        | 1927        | 1928        | 1929        | 1930             | 1931        | 1932        | 1933        | 1934 <sup>2</sup> |
|---------------------|-------------|-------------|-------------|-------------|-------------|------------------|-------------|-------------|-------------|-------------------|
|                     | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i>      | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i>       |
| New York.....       | 3,055       | 2,367       | 1,159       | 1,744       | 865         | 2,310            | 956         | 1,920       | 882         | 45                |
| New Jersey.....     | 1,047       | 1,145       | 1,089       | 41          | 544         | 24               | 88          | 47          | 5           | 1                 |
| Pennsylvania.....   | 204         | 828         | 514         | 806         | 732         | 330              | 658         | 587         | 274         | 424               |
| Ohio.....           | 516         | 434         | 441         | 426         | 2           | 98               | 122         | 106         | 2           | 4                 |
| Indiana.....        | 18          | 416         | 245         | 398         | 676         | ( <sup>3</sup> ) | 533         | -----       | 225         | 1                 |
| Illinois.....       | 579         | 3,010       | 1,691       | 1,975       | 4,637       | ( <sup>3</sup> ) | 5,307       | 46          | 1,783       | 318               |
| Michigan.....       | 264         | 675         | 397         | 514         | 312         | 183              | 259         | 292         | 3           | 80                |
| Missouri.....       | 14          | 34          | 14          | 2           | 56          | -----            | 83          | -----       | 7           | 4                 |
| Delaware.....       | 148         | 723         | 524         | 30          | 540         | 31               | 495         | 29          | 2           | -----             |
| Maryland.....       | 70          | 652         | 366         | 291         | 495         | 83               | 149         | 60          | 156         | -----             |
| Virginia.....       | 39          | 358         | 461         | 324         | 623         | 19               | 446         | 87          | 747         | 275               |
| West Virginia.....  | 2           | 353         | 211         | 166         | 246         | 32               | 114         | 39          | 169         | 6                 |
| North Carolina..... | 2,037       | 2,155       | 1,702       | 3,242       | 1,250       | 2,172            | 2,564       | 1,833       | 1,280       | 1,161             |
| South Carolina..... | 239         | 448         | 644         | 865         | 602         | 747              | 862         | 523         | 719         | 798               |
| Georgia.....        | 13,513      | 17,963      | 11,882      | 15,926      | 5,298       | 8,623            | 13,589      | 2,024       | 7,896       | 8,209             |
| Kentucky.....       | 6           | 69          | 43          | 87          | 60          | -----            | 217         | 3           | 27          | 39                |
| Tennessee.....      | 605         | 1,806       | 292         | 2,077       | 1,144       | 256              | 1,364       | 6           | 245         | 777               |
| Alabama.....        | 224         | 375         | 11          | 325         | 81          | 42               | 232         | -----       | 15          | 72                |
| Mississippi.....    | 32          | 88          | -----       | 76          | 60          | 7                | 123         | -----       | 5           | 6                 |
| Arkansas.....       | 2,300       | 2,529       | 1,780       | 4,013       | 2,679       | 41               | 4,187       | 233         | 256         | 1,658             |
| Oklahoma.....       | 113         | 20          | 118         | 17          | 121         | -----            | 4           | 3           | -----       | 30                |
| Texas.....          | 1,070       | 964         | 49          | 278         | 569         | 21               | 143         | 20          | 27          | 16                |
| Idaho.....          | 2           | 78          | 38          | 125         | 135         | 1                | 31          | 34          | 22          | 39                |
| Colorado.....       | 834         | 1,271       | 1,709       | 1,117       | 1,765       | 1,369            | 1,507       | 1,743       | 847         | 1,923             |
| Utah.....           | 94          | 774         | 798         | 694         | 590         | 341              | 221         | 447         | -----       | 127               |
| Washington.....     | 991         | 1,419       | 243         | 1,741       | 1,554       | 609              | 912         | 892         | 121         | 989               |
| Oregon.....         | 47          | 50          | 21          | 76          | 51          | 48               | 29          | 33          | 33          | 27                |
| California.....     | 12,785      | 17,416      | 15,145      | 10,689      | 9,780       | 21,072           | 10,859      | 9,739       | 12,507      | 9,631             |
| Other States.....   | 10          | 15          | 11          | 10          | 24          | 31               | 16          | 5           | 8           | 21                |
| Total.....          | 40,858      | 58,465      | 41,503      | 56,975      | 35,451      | 38,490           | 46,070      | 20,751      | 28,263      | 26,581            |

<sup>1</sup> Crop-movement season extends from May through October of a given year. Figures for New York for 1926 and 1932 include shipments in November following the regular crop-movement season.<sup>2</sup> Preliminary<sup>3</sup> No shipments because of frost killing.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

TABLE 228.—*Peaches: Average l. c. l. price to jobbers, New York and Chicago, 1925-34*

| Market and season | 6-basket carrier |                |                | Bushel basket  |                |                |                |                |
|-------------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|                   | June             | July           | August         | June           | July           | August         | September      | October        |
| New York:         | <i>Dollars</i>   | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> |
| 1925.....         | 3.43             | 2.24           | 2.23           | 3.38           | 2.22           | 2.18           | 2.74           | 2.46           |
| 1926.....         | 3.14             | 1.79           | 1.28           | 3.05           | 1.74           | 1.45           | 1.26           | 1.17           |
| 1927.....         | 3.22             | 2.59           | 2.65           | 3.10           | 2.80           | 2.94           | 2.19           | 2.59           |
| 1928.....         | 3.45             | 2.17           | 1.62           | 3.61           | 2.01           | 1.69           | 2.05           | 1.74           |
| 1929.....         | 3.86             | 3.45           | 2.70           | 3.85           | 2.95           | 2.56           | 2.52           | .....          |
| 1930.....         | 3.58             | 5.22           | 2.62           | 4.08           | 2.94           | 2.63           | 2.10           | .....          |
| 1931.....         | 2.96             | 2.58           | 1.22           | 2.97           | 2.14           | 1.50           | 1.21           | .....          |
| 1932.....         | 2.98             | 2.94           | 1.26           | .....          | 2.81           | 1.46           | 1.39           | .78            |
| 1933.....         | 3.06             | 1.70           | 1.57           | 3.14           | 2.06           | 1.79           | 1.93           | .....          |
| 1934.....         | 2.78             | 2.33           | 2.03           | 2.70           | 2.20           | 2.16           | 3.13           | .....          |
| Chicago:          |                  |                |                |                |                |                |                |                |
| 1925.....         | 3.11             | 2.35           | 3.01           | 3.08           | 2.45           | 3.16           | 2.72           | 2.38           |
| 1926.....         | 3.02             | 1.96           | 1.53           | 2.44           | 2.02           | 1.79           | 1.76           | 1.44           |
| 1927.....         | 2.30             | 2.32           | .....          | 2.35           | 2.66           | 2.81           | 2.30           | .....          |
| 1928.....         | 3.40             | 2.09           | 1.44           | .....          | 2.18           | 1.94           | 2.15           | 2.11           |
| 1929.....         | 4.08             | 3.45           | .....          | .....          | 2.93           | 2.05           | 2.31           | .....          |
| 1930.....         | 3.55             | 3.18           | 2.45           | 2.97           | 3.04           | 3.02           | 2.34           | .....          |
| 1931.....         | .....            | 2.03           | 1.27           | .....          | 2.01           | 1.27           | 1.17           | .....          |
| 1932.....         | .....            | 3.02           | 1.57           | .....          | 3.05           | 1.72           | 1.30           | .95            |
| 1933.....         | 2.34             | 1.68           | .....          | 2.56           | 1.94           | 2.11           | 2.22           | .....          |
| 1934.....         | 2.25             | 1.91           | 2.11           | 2.72           | 2.27           | 2.47           | 2.28           | .....          |

Bureau of Agricultural Economics. Compiled from daily market reports from Bureau representatives in the markets. Average prices as shown are based on stock of good merchantable quality and condition; they are simple averages of daily range of selling prices.

TABLE 229.—*Pears: Total production, average price per bushel received by producers, and exports of the United States, 1919-34*

| Year      | Production           | Price <sup>1</sup> | Farm value, basis average price | Domestic exports year beginning July <sup>2</sup> |                     |                     |                         |                          |
|-----------|----------------------|--------------------|---------------------------------|---|---------------------|---------------------|-------------------------|--------------------------|
|           |                      |                    |                                 | Fresh <sup>3</sup>                                | Canned <sup>3</sup> | Dried               | Total in terms of fresh | Percentage of production |
|           | <i>1,000 bushels</i> | <i>Dollars</i>     | <i>1,000 dollars</i>            | <i>1,000 pounds</i>                               | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 bushels</i>    | <i>Percent</i>           |
| 1919..... | 14,804               | .....              | .....                           | .....   | .....               | .....               | .....                   | .....                    |
| 1919..... | 14,591               | 1.84               | 27,378                          | .....   | .....               | .....               | .....                   | .....                    |
| 1920..... | 17,168               | 1.08               | 28,765                          | .....   | .....               | .....               | .....                   | .....                    |
| 1921..... | 11,241               | 1.70               | 19,052                          | .....   | .....               | .....               | .....                   | .....                    |
| 1922..... | 20,206               | 1.09               | 22,052                          | 36,785  | 49,355              | .....               | 2,823                   | 14.0                     |
| 1923..... | 10,967               | 1.24               | 21,061                          | 50,237  | 39,431              | .....               | 2,648                   | 15.6                     |
| 1924..... | 18,412               | 1.43               | 26,401                          | 41,452  | 53,851              | .....               | 3,107                   | 16.9                     |
| 1925..... | 19,038               | 1.40               | 28,020                          | 71,805  | 75,876              | .....               | 4,645                   | 23.3                     |
| 1926..... | 24,564               | .89                | 21,626                          | 73,877  | 66,104              | .....               | 4,293                   | 17.5                     |
| 1927..... | 24,991               | 1.33               | 23,819                          | 51,056  | 52,671              | .....               | 3,258                   | 18.1                     |
| 1928..... | 23,518               | 1.01               | 23,704                          | 82,847  | 82,652              | 2,626               | 5,388                   | 22.9                     |
| 1929..... | 8,600                | .....              | .....                           | .....   | .....               | .....               | .....                   | .....                    |
| 1929..... | 21,138               | 1.43               | 30,152                          | 62,024  | 54,709              | 3,655               | 3,876                   | 18.3                     |
| 1930..... | 25,605               | .75                | 18,321                          | 134,670   | 74,355              | 8,037               | 6,574                   | 25.6                     |
| 1931..... | 23,357               | .60                | 13,676                          | 90,702  | 71,570              | 6,079               | 5,378                   | 23.0                     |
| 1932..... | 22,050               | .39                | 7,627                           | 119,887   | 60,762              | 6,257               | 5,553                   | 25.2                     |
| 1933..... | 21,192               | .55                | 10,780                          | 111,008   | 78,384              | 8,408               | 6,279                   | 29.6                     |
| 1934..... | 23,474               | .70                | 16,193                          | .....   | .....               | .....               | .....                   | .....                    |

<sup>1</sup> From 1919 to 1925, Nov. 15 price; 1926-34, average price for the crop-marketing season.

<sup>2</sup> Canned pears converted to terms of fresh on the basis that 1 pound canned fruit is equivalent to 2 pounds fresh; dried pears converted to terms of fresh on the basis that dried pears equal 25 percent of fresh; 48 pounds fresh equals 1 bushel. No imports of pears reported. Compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1923-26, January and June issues, 1927-34.

<sup>3</sup> Exports were reported in value only prior to July 1, 1922.

<sup>4</sup> Includes some quantities not harvested on account of market conditions as follows: 42,000 bushels in 1927; 62,000 in 1928; 1,292,000 in 1930; 625,000 in 1931; 2,666,000 in 1932; 1,667,000 in 1933, and 375,000 in 1934. Prices and value are computed on the harvested crop.

<sup>5</sup> January-June 1929. Not previously reported.

<sup>6</sup> Preliminary.

Bureau of Agricultural Economics; production figures are estimates of the Crop Reporting Board, revised. Italic figures are census returns. Prices are based upon returns from crop reporters.



TABLE 230.—*Pears: Production and average price per bushel received by producers, by States, average 1927-31, and annual 1933 and 1934*

| State and division | Production      |           |                   | Price for crop of— |                   | State and division | Production      |           |                   | Price for crop of— |                   |
|--------------------|-----------------|-----------|-------------------|--------------------|-------------------|--------------------|-----------------|-----------|-------------------|--------------------|-------------------|
|                    | Average 1927-31 | 1933      | 1934 <sup>1</sup> | 1933               | 1934 <sup>1</sup> |                    | Average 1927-31 | 1933      | 1934 <sup>1</sup> | 1933               | 1934 <sup>1</sup> |
|                    | 1,000 bu.       | 1,000 bu. | 1,000 bu.         | Dol.               | Dol.              |                    | 1,000 bu.       | 1,000 bu. | 1,000 bu.         | Dol.               | Dol.              |
| Maine.....         | 13              | 11        | 2                 | 1.05               | 1.50              | Ky.....            | 186             | 80        | 184               | 0.80               | 0.65              |
| N. H.....          | 12              | 12        | 5                 | 1.95               | 1.25              | Tenn.....          | 240             | 94        | 285               | .95                | .80               |
| Vt.....            | 9               | 7         | 3                 | 1.15               | 1.20              | Ala.....           | 279             | 132       | 326               | .85                | .80               |
| Mass.....          | 54              | 57        | 35                | .85                | 1.10              | Miss.....          | 204             | 85        | 323               | .85                | .50               |
| R. I.....          | 8               | 8         | 6                 | 1.00               | 1.15              | Ark.....           | 138             | 58        | 158               | .95                | .70               |
| Conn.....          | 23              | 20        | 14                | 1.00               | 1.25              | La.....            | 64              | 31        | 69                | 1.00               | .55               |
| N. Y.....          | 1,178           | 900       | 1,011             | .85                | .85               | Okla.....          | 166             | 69        | 171               | 1.00               | .85               |
| N. J.....          | 111             | 71        | 74                | .65                | .65               | Tex.....           | 409             | 104       | 303               | 1.05               | .90               |
| Pa.....            | 384             | 366       | 385               | .75                | .75               |                    |                 |           |                   |                    |                   |
| N. Atlantic.....   | 1,792           | 1,452     | 1,535             | .82                | .83               | S. Central.....    | 1,684           | 663       | 1,819             | .92                | .87               |
| Ohio.....          | 341             | 336       | 394               | .75                | .60               | Idaho.....         | 65              | 59        | 52                | 1.00               | 1.10              |
| Ind.....           | 201             | 100       | 178               | .65                | .55               | Colo.....          | 406             | 271       | 307               | .85                | .60               |
| Ill.....           | 499             | 320       | 641               | .70                | .55               | N. Mex.....        | 40              | 9         | 49                | 1.35               | .95               |
| Mich.....          | 546             | 332       | 745               | .80                | .65               | Ariz.....          | 15              | 13        | 11                | 1.45               | 1.45              |
| Iowa.....          | 79              | 58        | 74                | .95                | .90               | Utah.....          | 74              | 47        | 53                | 1.30               | .90               |
| Mo.....            | 316             | 146       | 298               | .75                | .70               | Nev.....           | 4               | 4         | 6                 | 1.50               | 1.25              |
| Nebr.....          | 37              | 17        | 20                | 1.40               | 1.10              | Wash.....          | 3,429           | 4,264     | 4,042             | .40                | .90               |
| Kans.....          | 188             | 90        | 145               | .95                | .80               | Oreg.....          | 2,554           | 2,738     | 2,470             | .45                | .60               |
|                    |                 |           |                   |                    |                   | Calif.....         | 9,067           | 9,209     | 9,751             | .51                | .77               |
| N. Central.....    | 2,206           | 1,599     | 2,495             | .78                | .64               | Western.....       | 15,654          | 16,014    | 16,741            | .48                | .70               |
| Del.....           | 28              | 20        | 17                | .85                | .60               | United States..... | 22,334          | 21,192    | 23,474            | .55                | .70               |
| Md.....            | 106             | 66        | 94                | .60                | .60               |                    |                 |           |                   |                    |                   |
| Va.....            | 290             | 270       | 194               | .60                | .75               |                    |                 |           |                   |                    |                   |
| W. Va.....         | 61              | 57        | 25                | .90                | .95               |                    |                 |           |                   |                    |                   |
| N. C.....          | 206             | 228       | 218               | .75                | .85               |                    |                 |           |                   |                    |                   |
| S. C.....          | 95              | 94        | 84                | .80                | .80               |                    |                 |           |                   |                    |                   |
| Ga.....            | 162             | 114       | 185               | .80                | .80               |                    |                 |           |                   |                    |                   |
| Fla.....           | 50              | 25        | 67                | .85                | .50               |                    |                 |           |                   |                    |                   |
| S. Atlantic.....   | 998             | 874       | 884               | .72                | .72               |                    |                 |           |                   |                    |                   |

<sup>1</sup> Preliminary.<sup>2</sup> Includes some quantities not harvested on account of market conditions as follows: 42,000 bushels in 1927; 62,000 in 1928; 1,292,000 in 1930; 625,000 in 1931; 1,667,000 in 1933, and 375,000 in 1934. Prices and value are computed on the harvested crop.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 231.—*Pears: Car-load shipments, by State of origin, 1924-25 to 1933-34*

| State             | Crop-movement season <sup>1</sup> |         |         |         |         |         |         |         |         |                      |
|-------------------|-----------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|----------------------|
|                   | 1924-25                           | 1925-26 | 1926-27 | 1927-28 | 1928-29 | 1929-30 | 1930-31 | 1931-32 | 1932-33 | 1933-34 <sup>2</sup> |
|                   | Cars                              | Cars    | Cars    | Cars    | Cars    | Cars    | Cars    | Cars    | Cars    | Cars                 |
| New York.....     | 2,978                             | 4,610   | 2,263   | 1,694   | 1,590   | 547     | 2,661   | 831     | 2,342   | 1,000                |
| Ohio.....         | 47                                | 62      | 100     | 130     | 104     | 33      | 77      | 26      | 34      | 11                   |
| Illinois.....     | 595                               | 614     | 858     | 223     | 370     | 787     | 154     | 1,058   | -----   | 138                  |
| Michigan.....     | 384                               | 151     | 457     | 536     | 449     | 147     | 469     | 131     | 400     | 125                  |
| Delaware.....     | 273                               | 128     | 249     | 49      | 1       | 20      | 13      | 7       | 25      | -----                |
| Maryland.....     | 30                                | 29      | 33      | 32      | 27      | 42      | 9       | 14      | 36      | 6                    |
| Alabama.....      | 27                                | 66      | 12      | 93      | 71      | 152     | 135     | 46      | 37      | -----                |
| Texas.....        | 129                               | 121     | 144     | 213     | 39      | 231     | 100     | 105     | 92      | -----                |
| Colorado.....     | 935                               | 717     | 750     | 737     | 264     | 1,082   | 249     | 397     | 125     | 79                   |
| Washington.....   | 2,456                             | 3,560   | 5,278   | 2,589   | 5,868   | 4,035   | 6,157   | 4,657   | 3,743   | 4,351                |
| Oregon.....       | 1,483                             | 2,425   | 2,909   | 2,977   | 4,437   | 4,211   | 5,123   | 2,824   | 3,574   | 2,833                |
| California.....   | 6,312                             | 8,718   | 11,673  | 9,215   | 11,063  | 9,465   | 13,490  | 9,804   | 7,329   | 5,572                |
| Other States..... | 567                               | 356     | 483     | 251     | 211     | 395     | 190     | 157     | 81      | 30                   |
| Total.....        | 16,245                            | 21,257  | 25,209  | 18,744  | 24,434  | 21,147  | 28,827  | 20,057  | 17,908  | 14,195               |

<sup>1</sup> Crop movement season covers 12 months, from June of one year through May of the following year. Figures for California for 1930-31, 1931-32, and 1932-33 include shipments in month preceding and following the regular crop-movement season.<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

TABLE 232.—*Peas, green, commercial crop: Acreage, production, and season average price per bushel and per ton received by producers; average 1928-32, and annual 1933 and 1934*

| Utilization and State           | Acreage                |                         |                         | Production                                   |  |  | Price for crop of—     |                        |                        |
|---------------------------------|------------------------|-------------------------|-------------------------|--|--|--|------------------------|------------------------|------------------------|
|                                 | Average 1928-32        | 1933                    | 1934                    | Average 1928-32                              | 1933   | 1934                                       | Average 1928-32        | 1933                   | 1934                   |
| For market.....                 | <i>Acres</i><br>80,040 | <i>Acres</i><br>110,060 | <i>Acres</i><br>100,420 | <i>1,000 bushels</i> <sup>1</sup><br>2 6,083 | <i>1,000 bushels</i> <sup>1</sup><br>2 8,605 | <i>1,000 bushels</i> <sup>1</sup><br>7,442 | <i>Dollars</i><br>1.51 | <i>Dollars</i><br>0.93 | <i>Dollars</i><br>1.29 |
| For manufacture:                |                        |                         |                         | <i>Short tons</i> <sup>2</sup>               | <i>Short tons</i> <sup>2</sup>               | <i>Short tons</i> <sup>2</sup>             |                        |                        |                        |
| Maine.....                      | 1,280                  | 1,480                   | 1,850                   | 1,130  | 1,320  | 2,330                                      | 62.40                  | 44.80                  | 57.20                  |
| New York.....                   | 31,210                 | 27,800                  | 32,000                  | 22,990                                       | 14,320                                       | 13,280                                     | 56.40                  | 41.00                  | 50.40                  |
| Pennsylvania.....               | 1,830                  | 2,000                   | 3,000                   | 1,520  | 1,650  | 3,000                                      | 55.60                  | 43.50                  | 50.70                  |
| Ohio.....                       | 4,850                  | 3,800                   | 4,540                   | 3,090  | 1,420  | 1,540                                      | 45.20                  | 30.00                  | 39.00                  |
| Indiana.....                    | 5,680                  | 4,300                   | 6,000                   | 5,790  | 1,940  | 2,610                                      | 45.40                  | 32.50                  | 39.00                  |
| Illinois.....                   | 12,550                 | 16,500                  | 9,000                   | 11,190                                       | 7,260  | 2,070                                      | 50.80                  | 43.00                  | 48.90                  |
| Michigan.....                   | 10,130                 | 10,700                  | 12,400                  | 6,710  | 4,550  | 6,390                                      | 45.20                  | 35.00                  | 48.00                  |
| Wisconsin.....                  | 102,400                | 93,000                  | 112,000                 | 81,830                                       | 54,870                                       | 71,120                                     | 55.90                  | 44.00                  | 50.60                  |
| Minnesota.....                  | 13,940                 | 17,000                  | 14,500                  | 10,800                                       | 9,440  | 5,800                                      | 48.80                  | 43.90                  | 44.30                  |
| Delaware.....                   | 2,530                  | 2,250                   | 2,800                   | 1,690  | 1,960  | 3,010                                      | 57.00                  | 41.30                  | 50.00                  |
| Maryland.....                   | 12,570                 | 11,300                  | 13,500                  | 9,330  | 9,040  | 14,850                                     | 56.50                  | 45.60                  | 52.40                  |
| Montana.....                    | 3,120                  | 2,540                   | 2,100                   | 3,580  | 2,790  | 2,620                                      | 44.40                  | 30.00                  | 49.00                  |
| Colorado.....                   | 3,270                  | 2,330                   | 3,480                   | 2,700  | 1,960  | 3,430                                      | 44.10                  | 35.30                  | 37.40                  |
| Utah.....                       | 9,720                  | 9,300                   | 10,500                  | 11,710                                       | 9,070  | 11,020                                     | 54.10                  | 41.50                  | 53.00                  |
| Washington.....                 | 2,080                  | 3,200                   | 10,500                  | 2,190  | 5,120  | 9,030                                      | 54.30                  | 40.00                  | 50.00                  |
| Other States <sup>4</sup> ..... | 6,330                  | 9,930                   | 12,200                  | 5,820  | 10,270                                       | 12,670                                     | 57.48                  | 46.06                  | 51.46                  |
| Total.....                      | 223,490                | 217,430                 | 250,370                 | 182,070                                      | 136,980                                      | 164,770                                    | 54.13                  | 42.48                  | 50.08                  |

<sup>1</sup> Bushels containing approximately 30 pounds, unshelled.<sup>2</sup> Includes some quantities not harvested on account of market conditions; 117,000 bushels in 1932 and 210,000 in 1933. Price refers to harvested portion of crop.<sup>3</sup> Reported on shelled basis.<sup>4</sup> Other States includes California, Idaho, Iowa, Kansas, Nebraska, New Jersey, Oklahoma, Oregon, Tennessee, Virginia, and Wyoming.

Bureau of Agricultural Economics; estimates based on returns from crop reporters and canning establishments.

TABLE 233.—*Peas, green: Car-lot shipments, by State of origin, 1925-34*<sup>1</sup>

| State               | 1925        | 1926        | 1927        | 1928        | 1929        | 1930        | 1931        | 1932        | 1933        | 1934 <sup>2</sup> |
|---------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|
|                     | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i>       |
| New York.....       | 885         | 1,110       | 975         | 837         | 731         | 892         | 431         | 351         | 123         | 39                |
| New Jersey.....     | 20          | 27          | 40          | 38          | 28          | 1           | 13          | 1           | 1           | 3                 |
| Maryland.....       | 48          | 55          | 54          | 68          | 52          | 2           | 13          |             |             | 3                 |
| Virginia.....       | 303         | 288         | 259         | 281         | 222         | 129         | 232         | 75          | 90          | 66                |
| North Carolina..... | 491         | 596         | 570         | 635         | 368         | 482         | 554         | 284         | 335         | 264               |
| South Carolina..... | 104         | 167         | 207         | 247         | 244         | 265         | 256         | 71          | 100         | 95                |
| Florida.....        | 5           |             | 9           | 14          | 31          | 6           | 130         | 146         | 331         | 745               |
| Mississippi.....    | 149         | 233         | 243         | 250         | 199         | 234         | 282         | 46          | 100         | 166               |
| Idaho.....          | 13          | 40          | 101         | 176         | 238         | 407         | 415         | 349         | 322         | 281               |
| Colorado.....       | 35          | 58          | 149         | 348         | 459         | 463         | 559         | 590         | 445         | 407               |
| Washington.....     | 43          | 64          | 111         | 152         | 334         | 791         | 539         | 829         | 1,087       | 606               |
| California.....     | 569         | 803         | 1,361       | 1,642       | 2,205       | 3,494       | 3,016       | 4,891       | 5,912       | 4,103             |
| Other States.....   | 42          | 127         | 100         | 63          | 77          | 128         | 120         | 217         | 195         | 153               |
| Total.....          | 2,707       | 3,568       | 4,179       | 4,801       | 5,188       | 7,294       | 6,560       | 7,850       | 9,047       | 6,931             |

<sup>1</sup> Crop-movement season is for calendar year, except Florida and Texas, which begin in October of the preceding year.<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

TABLE 234.—*Peas, canned: Pack<sup>1</sup> in the United States, 1922-34*

| State                         | Season           |             |             |             |             |                  |                  |                  |                  |                  |                  |                  |                  |
|-------------------------------|------------------|-------------|-------------|-------------|-------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|                               | 1922             | 1923        | 1924        | 1925        | 1926        | 1927             | 1928             | 1929             | 1930             | 1931             | 1932             | 1933             | 1934             |
|                               | 1,000 cases      | 1,000 cases | 1,000 cases | 1,000 cases | 1,000 cases | 1,000 cases      | 1,000 cases      | 1,000 cases      | 1,000 cases      | 1,000 cases      | 1,000 cases      | 1,000 cases      | 1,000 cases      |
| New York.....                 | 2,137            | 2,541       | 2,931       | 2,385       | 2,624       | 1,668            | 2,222            | 1,683            | 3,164            | 1,786            | 1,021            | 1,279            | 1,124            |
| New Jersey <sup>2</sup> ..... | 153              | 199         | 331         | 257         | 143         | 267              | 242              | 383              | 74               | 298              | 49               | 3,220            | 384              |
| Ohio.....                     | 225              | 384         | 430         | 232         | 278         | 205              | 336              | 337              | 208              | 398              | 131              | 140              | 156              |
| Indiana.....                  | 268              | 367         | 483         | 86          | 500         | 90               | 427              | 404              | 564              | 711              | 412              | 177              | 262              |
| Illinois.....                 | 516              | 586         | 697         | 357         | 630         | 563              | 617              | 767              | 1,560            | 1,008            | 1,149            | 671              | 184              |
| Michigan.....                 | 455              | 392         | 710         | 451         | 723         | 399              | 542              | 558              | 880              | 434              | 291              | ( <sup>3</sup> ) | 644              |
| Wisconsin.....                | 7,042            | 6,961       | 10,390      | 10,003      | 9,287       | 6,549            | 9,248            | 9,399            | 10,492           | 5,057            | 3,346            | 5,163            | 6,743            |
| Minnesota.....                | ( <sup>4</sup> ) | 254         | 470         | 432         | 446         | 497              | 722              | 926              | 1,333            | 617              | 1,161            | 886              | 528              |
| Maryland.....                 | 489              | 591         | 873         | 956         | 840         | 986              | 1,030            | 1,469            | 400              | 1,243            | 689              | 987              | 1,657            |
| Utah.....                     | 751              | 918         | 830         | 1,346       | 1,029       | 802              | 1,154            | 1,241            | 1,662            | 676              | 752              | 882              | 1,311            |
| California.....               | 496              | 239         | 282         | 271         | 222         | ( <sup>5</sup> ) | ( <sup>5</sup> ) | ( <sup>5</sup> ) | ( <sup>5</sup> ) | ( <sup>5</sup> ) | ( <sup>5</sup> ) | ( <sup>5</sup> ) | ( <sup>5</sup> ) |
| Other States.....             | 510              | 516         | 888         | 1,040       | 937         | 910              | 1,403            | 1,363            | 1,098            | 1,063            | 1,366            | 2,488            | 2,749            |
| United States.....            | 13,042           | 13,948      | 19,315      | 17,816      | 17,709      | 12,936           | 17,943           | 18,530           | 22,035           | 13,286           | 10,367           | 12,893           | 15,742           |

<sup>1</sup> Stated in cases of 24 No. 2 cans.<sup>2</sup> Includes Delaware through 1932 and in 1934.<sup>3</sup> Figure for Delaware; New Jersey included in "Other States."<sup>4</sup> Included in "Other States."<sup>5</sup> Includes Idaho.

Bureau of Agricultural Economics; compiled from National Cannery Association, 1922-26 and 1934; Bureau of the Census, 1927-29; Foodstuffs Division, Bureau of Foreign and Domestic Commerce, 1930-33.

TABLE 235.—*Pecans: Production and price per pound received by producers Dec. 1, by States, average 1927-31, and annual 1933 and 1934*

| State      | Production         |           |                   |                    |           |                   |                 |           |                   | Price, Dec. 1 for— |       |                    |      |               |      |
|------------|--------------------|-----------|-------------------|--------------------|-----------|-------------------|-----------------|-----------|-------------------|--------------------|-------|--------------------|------|---------------|------|
|            | Improved varieties |           |                   | Seedling varieties |           |                   | Total           |           |                   | Improved varieties |       | Seedling varieties |      | All varieties |      |
|            | Average 1927-31    | 1933      | 1934 <sup>1</sup> | Average 1927-31    | 1933      | 1934 <sup>1</sup> | Average 1927-31 | 1933      | 1934 <sup>1</sup> | 1933               | 1934  | 1933               | 1934 | 1933          | 1934 |
|            | 1,000 lb.          | 1,000 lb. | 1,000 lb.         | 1,000 lb.          | 1,000 lb. | 1,000 lb.         | 1,000 lb.       | 1,000 lb. | 1,000 lb.         | Ct.                | Ct.   | Ct.                | Ct.  | Ct.           | Ct.  |
| Ill.....   | 0                  | 0         | 0                 | 144                | 150       | 185               | 144             | 150       | 185               | -----              | ----- | 7.5                | 10.0 | 7.5           | 10.0 |
| Mo.....    | 14                 | 22        | 10                | 788                | 1,328     | 490               | 800             | 1,350     | 500               | 13.0               | 20.0  | 7.0                | 12.5 | 7.1           | 12.6 |
| N. C.....  | 481                | 400       | 450               | 260                | 300       | 300               | 741             | 700       | 750               | 19.0               | 20.0  | 12.5               | 16.0 | 16.3          | 18.4 |
| S. C.....  | 620                | 1,020     | 824               | 166                | 180       | 146               | 786             | 1,200     | 970               | 15.0               | 17.5  | 10.0               | 12.2 | 14.2          | 16.7 |
| Ga.....    | 5,708              | 5,860     | 5,673             | 634                | 440       | 427               | 6,340           | 6,300     | 6,100             | 12.0               | 13.8  | 6.0                | 8.0  | 11.6          | 13.4 |
| Fla.....   | 1,166              | 1,080     | 800               | 363                | 270       | 200               | 1,529           | 1,350     | 1,000             | 12.0               | 15.0  | 7.0                | 9.6  | 11.0          | 13.9 |
| Ala.....   | 2,190              | 2,650     | 1,870             | 432                | 350       | 230               | 2,622           | 3,000     | 2,100             | 15.0               | 15.0  | 7.0                | 9.5  | 14.1          | 14.4 |
| Miss.....  | 2,294              | 2,475     | 975               | 2,348              | 2,025     | 975               | 4,840           | 4,500     | 1,950             | 12.5               | 19.0  | 7.5                | 13.0 | 10.2          | 16.0 |
| Ark.....   | 93                 | 120       | 80                | 1,617              | 2,040     | 1,270             | 1,710           | 2,160     | 1,350             | 14.5               | 18.0  | 6.5                | 9.0  | 6.9           | 9.5  |
| La.....    | 741                | 1,050     | 328               | 4,109              | 5,950     | 1,842             | 4,850           | 7,000     | 2,170             | 10.5               | 17.0  | 6.0                | 11.0 | 6.7           | 11.9 |
| Okl.....   | 67                 | 95        | 102               | 11,273             | 9,405     | 10,143            | 11,340          | 9,500     | 10,250            | 13.5               | 21.0  | 5.4                | 11.6 | 5.5           | 11.7 |
| Texas..... | 560                | 720       | 390               | 20,160             | 23,280    | 12,610            | 20,720          | 24,000    | 13,000            | 15.0               | 20.0  | 5.8                | 11.0 | 6.1           | 11.3 |
| U. S.....  | 13,932             | 15,492    | 11,502            | 42,289             | 45,718    | 28,823            | 56,222          | 61,210    | 40,325            | 13.0               | 15.4  | 6.0                | 11.2 | 7.8           | 12.4 |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 236.—*Peppers, commercial crop for market: Acreage, production, and season average price per bushel received by producers, average 1928-32, annual 1933 and 1934*

| Marketing season  | Acreage            |              |              | Production               |                          |                          | Price for crop of — |                |                |
|-------------------|--------------------|--------------|--------------|--------------------------|--------------------------|--------------------------|---------------------|----------------|----------------|
|                   | Average<br>1928-32 | 1933         | 1934         | Average<br>1928-32       | 1933                     | 1934                     | Average<br>1928-32  | 1933           | 1934           |
|                   | <i>Acres</i>       | <i>Acres</i> | <i>Acres</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>Dollars</i>      | <i>Dollars</i> | <i>Dollars</i> |
| Fall.....         | 2,200              | 2,000        | 1,750        | 455                      | 374                      | 519                      | 1.67                | 1.11           | 1.29           |
| Early.....        | 5,440              | 6,900        | 4,800        | 1,397                    | 1,860                    | 1,026                    | 1.35                | .47            | 1.10           |
| Second early..... | 1,950              | 1,640        | 1,650        | 297                      | 294                      | 238                      | .83                 | .56            | .63            |
| Intermediate..... | 6,350              | 6,000        | 5,800        | 1,503                    | 1,356                    | 1,285                    | .51                 | .30            | .40            |
| Late.....         | 850                | 1,050        | 1,200        | 244                      | 343                      | 431                      | .82                 | .50            | .67            |
| Total.....        | 16,790             | 17,590       | 15,200       | 3,896                    | 4,227                    | 3,499                    | .93                 | .48            | .78            |

<sup>1</sup> Bushels containing approximately 25 pounds.

Bureau of Agricultural Economics; estimates based on returns from crop reporters.

TABLE 237.—*Plums and prunes: Production and average price per ton received by producers, by States, average 1927-31, and annual 1933 and 1934*

| Crop and State              | Production           |                      |                   | Price for crop of— |                   |
|-----------------------------|----------------------|----------------------|-------------------|--------------------|-------------------|
|                             | Average,<br>1927-31  | 1933                 | 1934 <sup>1</sup> | 1933               | 1934 <sup>1</sup> |
| <b>Fresh basis:</b>         |                      |                      |                   |                    |                   |
| Plums and prunes, fresh:    | <i>Short tons</i>    | <i>Short tons</i>    | <i>Short tons</i> | <i>Dollars</i>     | <i>Dollars</i>    |
| California.....             | <sup>2</sup> 62,000  | <sup>2</sup> 57,000  | 61,000            | 24.35              | 32.60             |
| Michigan <sup>3</sup> ..... | 6,026                | 5,320                | 6,830             | 34.00              | 36.00             |
| Idaho.....                  | 21,980               | 5,000                | 10,100            | 18.00              | 18.00             |
| Washington.....             | 16,455               | 15,795               | 17,900            | 17.00              | 17.00             |
| Oregon.....                 | 23,680               | 28,000               | 38,000            | 17.00              | 17.00             |
| Total.....                  | <sup>2</sup> 130,121 | <sup>2</sup> 111,115 | 133,830           | 21.46              | 25.16             |
| <b>Dry basis:</b>           |                      |                      |                   |                    |                   |
| Prunes, dried: <sup>4</sup> |                      |                      |                   |                    |                   |
| California.....             | <sup>2</sup> 207,260 | 182,000              | 170,000           | 80.00              | 80.00             |
| Oregon.....                 | <sup>2</sup> 24,700  | 15,000               | 28,000            | 70.00              | 85.00             |
| Washington.....             | 3,881                | 1,850                | 4,200             | 74.00              | 82.00             |
| Total.....                  | <sup>2</sup> 235,841 | 198,850              | 202,200           | 79.19              | 80.73             |

<sup>1</sup> Preliminary.<sup>2</sup> Includes some quantities not harvested on account of market conditions as follows: Plums, California, 7,000 tons in 1931 and 7,000 in 1933; prunes, dried, California, 13,000 tons in 1930; Oregon, 8,000 tons in 1930. Prices and value are computed on the harvested crop.<sup>3</sup> Plums.<sup>4</sup> To convert California estimates to fresh-fruit basis, multiply by 2½. In the other States, the ratio ranges from 3 to 4 fresh to 1 dried.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 238.—Potatoes: Acreage, production, value, and foreign trade, United States, 1919-34

| Year      | Acreage harvested | Average yield per acre | Production    | Price per bushel received by producers, Dec. 1 | Farm value, basis Dec. 1 price | Whole-sale price per bushel at New York <sup>2</sup> | Foreign trade, year beginning July |                      |                            |
|-----------|-------------------|------------------------|---------------|--|--------------------------------|--|------------------------------------|----------------------|----------------------------|
|           |                   |                        |               |  |                                |  | Domestic exports <sup>3</sup>      | Imports <sup>3</sup> | Net balance <sup>3,4</sup> |
|           | 1,000 acres       | Bushels                | 1,000 bushels | Cents  | 1,000 dollars                  | Cents  | 1,000 bushels                      | 1,000 bushels        | 1,000 bushels              |
| 1919..... | 3,252             | 89.3                   | 290,428       |  |                                |  |                                    |                      |                            |
| 1919..... | 3,300             | 90.1                   | 297,341       | 191.1  | 563,259                        | 284  | 3,723                              | 6,941                | -3,212                     |
| 1920..... | 3,301             | 111.8                  | 368,904       | 133.2  | 491,561                        | 103  | 4,803                              | 3,423                | +1,399                     |
| 1921..... | 3,598             | 90.4                   | 325,812       | 113.5  | 399,109                        | 123  | 2,827                              | 2,110                | +717                       |
| 1922..... | 3,946             | 106.3                  | 419,288       | 68.6   | 287,792                        | 97   | 2,980                              | 572                  | +2,408                     |
| 1923..... | 3,378             | 108.5                  | 366,356       | 91.5   | 335,310                        | 118  | 3,075                              | 564                  | +2,512                     |
| 1924..... | 2,911             | 121.1                  | 352,462       |  |                                |  |                                    |                      |                            |
| 1924..... | 3,110             | 123.7                  | 384,837       | 71.5   | 274,972                        | 78   | 3,653                              | 478                  | +3,175                     |
| 1925..... | 2,819             | 105.6                  | 297,567       | 106.3  | 494,765                        | 238  | 1,824                              | 5,420                | -3,596                     |
| 1926..... | 2,813             | 114.6                  | 322,350       | 136.3  | 439,469                        | 161  | 2,092                              | 6,349                | -4,257                     |
| 1927..... | 3,163             | 116.5                  | 368,813       | 108.9  | 401,788                        | 129  | 2,424                              | 3,803                | -1,379                     |
| 1928..... | 3,469             | 122.7                  | 425,626       | 57.2   | 243,542                        | 76   | 3,165                              | 2,698                | +467                       |
| 1929..... | 2,944             | 109.5                  | 322,416       |  |                                |  |                                    |                      |                            |
| 1929..... | 2,973             | 110.2                  | 327,652       | 131.5  | 430,950                        | 163  | 2,386                              | 6,006                | -3,620                     |
| 1930..... | 3,080             | 109.8                  | 332,693       | 91.5   | 304,558                        | 111  | 1,648                              | 5,729                | -4,081                     |
| 1931..... | 3,368             | 110.8                  | 372,994       | 46.4   | 173,100                        | 61   | 816                                | 1,493                | -677                       |
| 1932..... | 3,379             | 105.9                  | 357,871       | 36.5   | 141,328                        | 61   | 973                                | 440                  | +533                       |
| 1933..... | 3,194             | 100.3                  | 320,203       | 82.3   | 263,080                        | 113  | 721                                | 2,102                | -1,381                     |
| 1934..... | 3,303             | 116.6                  | 385,287       | 51.7   | 199,251                        |  |                                    |                      |                            |

<sup>1</sup> Beginning with 1919 prices are weighted average prices for crop-marketing season.

<sup>2</sup> Compiled from Producers Price Current. Prices in 1919 are averages of the high and low weekly quotations of New York potatoes, October-June, converted from dollars per 180 pounds to cents per bushel; beginning 1920, season September-May.

<sup>3</sup> Compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1919-28, January and June issues, 1927-34, and official records of the Bureau of Foreign and Domestic Commerce.

<sup>4</sup> The difference between total exports (domestic exports plus reexports) and total imports; beginning 1933-34 domestic exports minus imports for consumption. (See introductory text.) + indicates net exports and - indicates net imports.

<sup>5</sup> Preliminary.

Bureau of Agricultural Economics.

Acreage, yield, and production figures are estimates of the Crop Reporting Board, revised, 1919-28. See introductory text. Italic figures are census returns. Prices received by producers are based upon returns from crop reporters.

TABLE 239.—Potatoes: <sup>1</sup> Acreage, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934

| State and group             | Acreage harvested |             |                   | Yield per acre   |       |                   | Production       |           |                   | Price for crop of— |                   |
|-----------------------------|-------------------|-------------|-------------------|------------------|-------|-------------------|------------------|-----------|-------------------|--------------------|-------------------|
|                             | Average, 1927-31  | 1933        | 1934 <sup>2</sup> | Average, 1927-31 | 1933  | 1934 <sup>2</sup> | Average, 1927-31 | 1933      | 1934 <sup>2</sup> | 1933               | 1934 <sup>2</sup> |
| Surplus late potato States: | 1,000 acres       | 1,000 acres | 1,000 acres       | Bu.              | Bu.   | Bu.               | 1,000 bu.        | 1,000 bu. | 1,000 bu.         | Cents              | Cents             |
| Maine.....                  | 173               | 150         | 168               | 251              | 280   | 335               | 43,208           | 42,000    | 56,280            | 70                 | 24                |
| New York.....               | 215               | 200         | 210               | 117              | 123   | 155               | 25,386           | 24,600    | 32,560            | 103                | 49                |
| Pennsylvania.....           | 197               | 189         | 200               | 119              | 113   | 170               | 22,764           | 21,357    | 34,000            | 111                | 55                |
| Total.....                  | 584               | 539         | 578               | 149.6            | 163.2 | 212.5             | 91,358           | 87,957    | 122,830           | 89.2               | 39.2              |
| Michigan.....               | 247               | 265         | 268               | 99               | 78    | 128               | 21,511           | 20,670    | 34,304            | 74                 | 37                |
| Wisconsin.....              | 250               | 239         | 261               | 103              | 70    | 120               | 23,553           | 16,730    | 31,320            | 70                 | 44                |
| Minnesota.....              | 344               | 334         | 334               | 94               | 68    | 70                | 30,400           | 22,712    | 23,380            | 61                 | 43                |
| North Dakota.....           | 111               | 130         | 132               | 79               | 62    | 45                | 8,085            | 9,300     | 5,940             | 60                 | 53                |
| South Dakota.....           | 57                | 62          | 43                | 73               | 40    | 30                | 4,420            | 2,430     | 1,290             | 68                 | 84                |
| Total.....                  | 1,010             | 1,050       | 1,038             | 94.8             | 68.5  | 92.7              | 88,509           | 71,892    | 96,234            | 66.9               | 42.4              |
| Nebraska.....               | 110               | 115         | 115               | 82               | 75    | 30                | 9,404            | 8,625     | 3,450             | 71                 | 88                |
| Montana.....                | 21                | 23          | 23                | 104              | 85    | 70                | 2,195            | 1,955     | 1,610             | 65                 | 75                |
| Idaho.....                  | 99                | 95          | 104               | 200              | 220   | 185               | 21,388           | 21,850    | 19,240            | 52                 | 45                |
| Wyoming.....                | 22                | 31          | 25                | 109              | 100   | 40                | 2,521            | 3,100     | 1,600             | 66                 | 81                |

See footnotes at end of table.

TABLE 239.—*Potatoes:*<sup>1</sup> *Acreage, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934—Continued*

| State and group                      | Acreage harvested   |                |                   | Yield per acre      |       |                   | Production          |              |                   | Price for—<br>crop of— |                   |
|--------------------------------------|---------------------|----------------|-------------------|---------------------|-------|-------------------|---------------------|--------------|-------------------|------------------------|-------------------|
|                                      | Average,<br>1927-31 | 1933           | 1934 <sup>2</sup> | Average,<br>1922-31 | 1933  | 1934 <sup>2</sup> | Average,<br>1927-31 | 1933         | 1934 <sup>2</sup> | 1933                   | 1934 <sup>2</sup> |
|                                      | 1,000<br>acres      | 1,000<br>acres | 1,000<br>acres    | Bu.                 | Bu.   | Bu.               | 1,000<br>bu.        | 1,000<br>bu. | 1,000<br>bu.      | Cents                  | Cents             |
| Colorado.....                        | 99                  | 87             | 76                | 152                 | 150   | 75                | 15,150              | 13,050       | 5,700             | 61                     | 58                |
| Utah.....                            | 13                  | 14             | 13                | 154                 | 150   | 80                | 2,010               | 2,100        | 1,040             | 77                     | 55                |
| Nevada.....                          | 4                   | 2              | 2                 | 144                 | 125   | 105               | 569                 | 250          | 210               | 70                     | 58                |
| Washington.....                      | 50                  | 41             | 45                | 166                 | 180   | 162               | 8,567               | 7,880        | 7,290             | 68                     | 53                |
| Oregon.....                          | 38                  | 39             | 44                | 115                 | 160   | 130               | 4,757               | 6,240        | 5,720             | 61                     | 55                |
| California.....                      | 41                  | 33             | 41                | 181                 | 240   | 210               | 7,593               | 7,920        | 8,610             | 83                     | 56                |
| Total.....                           | 498                 | 480            | 488               | 142.7               | 151.0 | 110.4             | 74,155              | 72,470       | 63,870            | 63.4                   | 54.8              |
| Total, surplus late.....             | 2,092               | 2,069          | 2,104             | 121.4               | 112.3 | 129.7             | 254,081             | 232,319      | 272,934           | 74.3                   | 43.4              |
| Other late potato States:            |                     |                |                   |                     |       |                   |                     |              |                   |                        |                   |
| New Hampshire.....                   | 9                   | 8              | 9                 | 134                 | 180   | 185               | 1,332               | 1,440        | 1,665             | 107                    | 61                |
| Vermont.....                         | 16                  | 15             | 16                | 129                 | 130   | 170               | 2,238               | 1,950        | 2,720             | 105                    | 50                |
| Massachusetts.....                   | 13                  | 15             | 16                | 118                 | 155   | 160               | 1,420               | 2,325        | 2,560             | 136                    | 68                |
| Rhode Island.....                    | 2                   | 2              | 3                 | 132                 | 185   | 180               | 271                 | 370          | 540               | 145                    | 73                |
| Connecticut.....                     | 12                  | 13             | 15                | 126                 | 160   | 175               | 1,536               | 2,080        | 2,625             | 118                    | 65                |
| Total.....                           | 52                  | 53             | 59                | 126.6               | 154.1 | 171.4             | 6,797               | 8,165        | 10,110            | 119.3                  | 61.5              |
| West Virginia.....                   | 37                  | 37             | 40                | 95                  | 63    | 78                | 3,522               | 2,331        | 3,120             | 110                    | 88                |
| Ohio.....                            | 110                 | 112            | 109               | 94                  | 72    | 105               | 10,615              | 8,064        | 11,445            | 112                    | 72                |
| Indiana.....                         | 52                  | 37             | 62                | 89                  | 56    | 100               | 4,801               | 3,192        | 6,200             | 99                     | 59                |
| Illinois.....                        | 49                  | 48             | 52                | 85                  | 33    | 52                | 4,362               | 1,584        | 2,704             | 128                    | 95                |
| Iowa.....                            | 74                  | 75             | 77                | 89                  | 68    | 63                | 6,544               | 5,100        | 4,851             | 105                    | 84                |
| Total.....                           | 323                 | 329            | 340               | 90.9                | 61.6  | 83.3              | 29,844              | 20,271       | 28,320            | 109.2                  | 78.2              |
| New Mexico.....                      | 4                   | 8              | 7                 | 64                  | 80    | 70                | 312                 | 640          | 490               | 131                    | 95                |
| Arizona.....                         | 3                   | 3              | 3                 | 72                  | 80    | 60                | 244                 | 240          | 180               | 108                    | 104               |
| Total.....                           | 7                   | 11             | 10                | 68.5                | 80.0  | 67.0              | 556                 | 880          | 670               | 124.7                  | 97.5              |
| Total other late.....                | 382                 | 393            | 409               | 95.7                | 74.6  | 95.6              | 37,197              | 29,316       | 39,100            | 112.5                  | 72.0              |
| 30 late States.....                  | 2,474               | 2,462          | 2,513             | 117.3               | 106.3 | 124.2             | 291,279             | 261,635      | 312,034           | 78.5                   | 47.0              |
| Intermediate potato States:          |                     |                |                   |                     |       |                   |                     |              |                   |                        |                   |
| New Jersey.....                      | 42                  | 44             | 50                | 151                 | 164   | 181               | 7,081               | 7,216        | 9,050             | 137                    | 54                |
| Delaware.....                        | 5                   | 6              | 6                 | 87                  | 74    | 120               | 430                 | 444          | 720               | 101                    | 60                |
| Maryland.....                        | 32                  | 30             | 33                | 104                 | 95    | 99                | 3,646               | 2,850        | 3,267             | 104                    | 54                |
| Virginia.....                        | 113                 | 93             | 101               | 127                 | 93    | 133               | 15,989              | 8,649        | 13,433            | 99                     | 60                |
| Kentucky.....                        | 51                  | 62             | 64                | 84                  | 66    | 70                | 4,365               | 4,092        | 4,480             | 103                    | 80                |
| Missouri.....                        | 52                  | 54             | 46                | 86                  | 52    | 30                | 4,867               | 2,808        | 1,380             | 107                    | 90                |
| Kansas.....                          | 46                  | 42             | 37                | 95                  | 58    | 40                | 4,988               | 2,436        | 1,480             | 114                    | 83                |
| Total.....                           | 340                 | 331            | 337               | 111.2               | 86.1  | 100.3             | 41,866              | 28,495       | 33,810            | 111.8                  | 62.7              |
| 37 late and intermediate States..... | 2,814               | 2,793          | 2,850             | 116.5               | 103.9 | 121.3             | 332,645             | 290,130      | 345,844           | 81.8                   | 48.5              |
| Early potato States:                 |                     |                |                   |                     |       |                   |                     |              |                   |                        |                   |
| North Carolina.....                  | 74                  | 77             | 92                | 98                  | 95    | 116               | 7,573               | 7,315        | 10,672            | 87                     | 64                |
| South Carolina.....                  | 23                  | 16             | 21                | 125                 | 109   | 125               | 2,944               | 1,744        | 2,625             | 90                     | 89                |
| Georgia.....                         | 14                  | 18             | 20                | 65                  | 57    | 68                | 954                 | 1,026        | 1,360             | 96                     | 97                |
| Florida.....                         | 29                  | 18             | 25                | 109                 | 124   | 130               | 3,192               | 2,232        | 3,250             | 100                    | 114               |
| Tennessee.....                       | 44                  | 54             | 60                | 72                  | 66    | 72                | 3,178               | 3,564        | 4,320             | 94                     | 87                |
| Alabama.....                         | 29                  | 32             | 40                | 78                  | 72    | 94                | 2,350               | 2,304        | 3,760             | 68                     | 82                |
| Mississippi.....                     | 10                  | 13             | 16                | 72                  | 62    | 84                | 748                 | 806          | 1,344             | 91                     | 82                |
| Arkansas.....                        | 34                  | 39             | 41                | 75                  | 67    | 64                | 2,780               | 2,613        | 2,624             | 86                     | 54                |
| Louisiana.....                       | 37                  | 41             | 44                | 61                  | 57    | 67                | 2,856               | 2,327        | 2,948             | 76                     | 73                |
| Oklahoma.....                        | 43                  | 36             | 40                | 74                  | 69    | 69                | 3,235               | 2,494        | 2,760             | 95                     | 64                |
| Texas.....                           | 50                  | 57             | 54                | 68                  | 64    | 70                | 3,602               | 3,648        | 3,780             | 86                     | 105               |
| Total.....                           | 386                 | 401            | 453               | 82.5                | 75.0  | 87.1              | 32,911              | 30,073       | 39,443            | 87.5                   | 79.7              |
| United States.....                   | 3,201               | 3,194          | 3,303             | 112.9               | 100.3 | 116.6             | 365,556             | 320,203      | 385,287           | 82.3                   | 51.7              |

<sup>1</sup> Acreage and production estimates for each State cover the entire crop, whether commercial or non-commercial, early or late.<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 240.—Potatoes, early commercial crop: Acreage, production, and season average price per bushel received by producers, by States; average 1928-32, annual 1933 and 1934

| Group and State                     | Acreage                |                        |                        | Production                                  |  |   | Price for crop of—      |                        |                        |
|-------------------------------------|------------------------|------------------------|------------------------|---|--|---|-------------------------|------------------------|------------------------|
|                                     | Average<br>1928-32     | 1933                   | 1934                   | Average<br>1928-32                          | 1933                                       | 1934  | Average<br>1928-32      | 1933                   | 1934                   |
|                                     | <i>Acres</i><br>2, 400 | <i>Acres</i><br>2, 400 | <i>Acres</i><br>2, 600 | <i>1,000<br/>bushels<sup>1</sup></i><br>134 | <i>1,000<br/>bushels<sup>1</sup></i><br>96 | <i>1,000<br/>bushels<sup>1</sup></i><br>122 | <i>Dollars</i><br>1. 21 | <i>Dollars</i><br>. 63 | <i>Dollars</i><br>. 95 |
| Fall: Texas.....                    |                        |                        |                        |   |  |   |                         |                        |                        |
| Early (sec. 1):                     |                        |                        |                        |   |  |   |                         |                        |                        |
| Florida.....                        | 26, 500                | 17, 000                | 23, 500                | 2, 796                                      | 2, 163                                     | 3, 128                                      | 1. 50                   | . 85                   | 1. 13                  |
| South.....                          | 4, 860                 | 2, 500                 | 6, 000                 | 353   | 288  | 840   | 1. 98                   | . 90                   | 1. 20                  |
| North.....                          | 21, 640                | 14, 500                | 17, 500                | 2, 443                                      | 1, 875                                     | 2, 288                                      | 1. 43                   | . 84                   | 1. 10                  |
| Hastings.....                       | 18, 680                | 12, 500                | 14, 500                | 2, 108                                      | 1, 625                                     | 1, 958                                      | 1. 46                   | . 86                   | 1. 10                  |
| La Crosse.....                      | 2, 360                 | 1, 500                 | 2, 200                 | 264   | 188  | 242   | 1. 29                   | . 84                   | 1. 10                  |
| West.....                           | 600                    | 500                    | 800                    | 71  | 62   | 88  | 1. 06                   | . 40                   | 1. 10                  |
| Texas, lower Rio Grande Valley..... | 11, 880                | 10, 300                | 6, 600                 | 1, 032                                      | 855  | 772   | 1. 54                   | . 94                   | 1. 20                  |
| Total.....                          | 38, 380                | 27, 300                | 30, 100                | 3, 828                                      | 3, 018                                     | 3, 900                                      | 1. 50                   | . 88                   | 1. 14                  |
| Early (sec. 2):                     |                        |                        |                        |   |  |   |                         |                        |                        |
| Alabama.....                        | 12, 320                | 8, 000                 | 13, 200                | 1, 249                                      | 944  | 1, 901                                      | . 97                    | . 65                   | . 54                   |
| California.....                     | 14, 380                | 12, 600                | 16, 000                | 2, 226                                      | 2, 545                                     | 3, 456                                      | . 91                    | . 93                   | . 52                   |
| Georgia.....                        | 1, 940                 | 800                    | 2, 000                 | 264   | 140  | 250   | 1. 00                   | . 80                   | . 66                   |
| Louisiana.....                      | 21, 200                | 20, 000                | 23, 000                | 1, 541                                      | 1, 360                                     | 1, 840                                      | 1. 01                   | . 72                   | . 50                   |
| Mississippi.....                    | 1, 200                 | 1, 100                 | 2, 000                 | 109   | 77   | 240   | 1. 05                   | . 75                   | . 48                   |
| South Carolina.....                 | 16, 360                | 7, 000                 | 12, 000                | 2, 294                                      | 1, 165                                     | 1, 980                                      | . 90                    | . 70                   | . 60                   |
| Texas, other.....                   | 14, 940                | 12, 400                | 12, 400                | 1, 174                                      | 887  | 982   | . 92                    | . 67                   | . 64                   |
| Eagle Lake-Sugarland-Wharton.....   | 10, 140                | 7, 500                 | 6, 000                 | 763   | 495  | 432   | . 97                    | . 70                   | . 64                   |
| Other counties.....                 | 4, 800                 | 4, 900                 | 6, 400                 | 411   | 392  | 550   | . 83                    | . 63                   | . 64                   |
| Total.....                          | 82, 340                | 61, 900                | 80, 600                | 8, 857                                      | 7, 108                                     | 10, 649                                     | . 93                    | . 78                   | . 55                   |
| Second early:                       |                        |                        |                        |   |  |   |                         |                        |                        |
| Arkansas.....                       | 4, 680                 | 5, 000                 | 6, 000                 | 426   | 450  | 432   | . 72                    | . 87                   | . 45                   |
| North Carolina.....                 | 32, 480                | 27, 500                | 39, 000                | 4, 595                                      | 4, 070                                     | 6, 474                                      | . 80                    | . 77                   | . 50                   |
| Oklahoma.....                       | 11, 520                | 7, 000                 | 10, 000                | 1, 143                                      | 679  | 1, 000                                      | . 68                    | . 88                   | . 46                   |
| Tennessee.....                      | 1, 780                 | 2, 100                 | 2, 800                 | 145   | 189  | 238   | . 83                    | 1. 05                  | . 75                   |
| Total.....                          | 50, 460                | 41, 600                | 57, 800                | 6, 309                                      | 5, 388                                     | 8, 144                                      | . 77                    | . 80                   | . 50                   |
| Intermediate (sec. 1):              |                        |                        |                        |   |  |   |                         |                        |                        |
| Kansas.....                         | 16, 500                | 13, 500                | 13, 250                | 2, 585                                      | 1, 286                                     | 787   | . 56                    | 1. 31                  | . 52                   |
| Kaw Valley.....                     | 15, 520                | 12, 850                | 12, 500                | 2, 395                                      | 1, 156                                     | 712   | . 54                    | 1. 30                  | . 50                   |
| Scott County.....                   | 980                    | 650                    | 750                    | 190   | 130  | 75  | . 72                    | 1. 45                  | . 70                   |
| Kentucky.....                       | 5, 020                 | 4, 500                 | 5, 000                 | 596   | 369  | 300   | . 71                    | 1. 3 0                 | . 50                   |
| Maryland.....                       | 9, 420                 | 6, 100                 | 6, 700                 | 1, 341                                      | 732  | 871   | . 67                    | 1. 40                  | . 35                   |
| Missouri.....                       | 5, 500                 | 6, 600                 | 7, 300                 | 955   | 792  | 292   | . 65                    | 1. 40                  | . 45                   |
| Virginia.....                       | 74, 180                | 53, 000                | 63, 000                | 11, 536                                     | 5, 831                                     | 10, 012                                     | . 73                    | 1. 21                  | . 44                   |
| Norfolk district.....               | 11, 140                | 7, 700                 | 8, 600                 | 1, 656                                      | 1, 001                                     | 1, 376                                      | . 74                    | 1. 10                  | . 47                   |
| Eastern Shore.....                  | 58, 820                | 42, 400                | 51, 000                | 9, 301                                      | 4, 494                                     | 8, 180                                      | . 74                    | 1. 25                  | . 44                   |
| Other.....                          | 4, 220                 | 2, 900                 | 3, 400                 | 579   | 336  | 476   | . 67                    | 1. 05                  | . 40                   |
| Total.....                          | 110, 620               | 83, 700                | 95, 250                | 17, 013                                     | 9, 010                                     | 12, 262                                     | . 69                    | 1. 26                  | . 44                   |
| Intermediate (sec. 2):              |                        |                        |                        |   |  |   |                         |                        |                        |
| Nebraska.....                       | 1, 780                 | 1, 700                 | 2, 000                 | 354   | 391  | 430   | . 75                    | 1. 30                  | . 55                   |
| New Jersey.....                     | 32, 200                | 34, 000                | 39, 400                | 5, 632                                      | 5, 780                                     | 7, 289                                      | . 80                    | 1. 23                  | . 50                   |
| Total.....                          | 33, 980                | 35, 700                | 41, 400                | 5, 986                                      | 6, 171                                     | 7, 719                                      | . 80                    | 1. 23                  | . 50                   |
| Grant total.....                    | 318, 180               | 252, 600               | 307, 750               | 42, 127                                     | 30, 791                                    | 42, 798                                     | . 84                    | 1. 02                  | . 56                   |

<sup>1</sup> Bushels containing approximately 60 pounds.

Bureau of Agricultural Economics; estimates based on returns from crop reporters.

TABLE 241.—Potatoes: Acreage, yield per acre, and production, specified countries, average 1925-26 to 1929-30, annual 1933-34 and 1934-35

| Country  | Acreage                             |                |                      | Yield per acre                      |         |                      | Production                          |                  |                      |
|--|-------------------------------------|----------------|----------------------|-------------------------------------|---------|----------------------|-------------------------------------|------------------|----------------------|
|  | Average<br>1925-26<br>to<br>1929-30 | 1933-34        | 1934-35 <sup>1</sup> | Average<br>1925-26<br>to<br>1929-30 | 1933-34 | 1934-35 <sup>1</sup> | Average<br>1925-26<br>to<br>1929-30 | 1933-34          | 1934-35 <sup>1</sup> |
| <b>NORTHERN HEMISPHERE</b>   |                                     |                |                      |                                     |         |                      |                                     |                  |                      |
| North America:   | 1,000<br>acres                      | 1,000<br>acres | 1,000<br>acres       | Bu.                                 | Bu.     | Bu.                  | 1,000<br>bushels                    | 1,000<br>bushels | 1,000<br>bushels     |
| Canada.....  | 552                                 | 528            | 569                  | 135.1                               | 134.9   | 141.2                | 74,579                              | 71,242           | 80,320               |
| United States.....   | 3,048                               | 3,194          | 3,303                | 114.3                               | 100.3   | 116.6                | 348,402                             | 320,203          | 385,287              |
| Total.....   | 3,600                               | 3,722          | 3,872                | 117.5                               | 105.2   | 120.2                | 422,981                             | 391,445          | 465,607              |
| Europe:  |                                     |                |                      |                                     |         |                      |                                     |                  |                      |
| United Kingdom.....  | 800                                 | 811            | 765                  | 248.1                               | 253.4   | —                    | 198,501                             | 205,469          | —                    |
| Irish Free State.....  | 369                                 | 341            | 339                  | 238.1                               | 273.6   | —                    | 87,856                              | 93,296           | —                    |
| Norway.....  | 120                                 | 120            | 120                  | 263.3                               | 259.1   | 254.6                | 31,592                              | 35,890           | 30,556               |
| Sweden.....  | 366                                 | 327            | 327                  | 173.2                               | 222.2   | 178.7                | 63,397                              | 72,660           | 58,422               |
| Denmark.....   | 173                                 | 190            | 189                  | 209.5                               | 256.6   | —                    | 36,243                              | 48,762           | —                    |
| Netherlands.....   | 433                                 | 380            | 351                  | 280.0                               | 295.3   | 280.7                | 121,249                             | 112,196          | 91,490               |
| Belgium.....   | 408                                 | 404            | 393                  | 305.4                               | 335.5   | 297.2                | 124,585                             | 135,558          | 116,793              |
| France.....  | 3,606                               | 3,436          | 3,441                | 145.3                               | 158.3   | 164.3                | 523,939                             | 544,064          | 565,362              |
| Spain.....   | 812                                 | 976            | —                    | 172.0                               | 161.5   | —                    | 139,671                             | 157,630          | —                    |
| Italy.....   | 868                                 | 985            | 989                  | 83.9                                | 83.6    | 100.6                | 72,837                              | 87,232           | 99,451               |
| Switzerland.....   | 117                                 | 117            | 112                  | 219.6                               | 261.2   | 256.0                | 25,691                              | 30,563           | 28,674               |
| Germany.....   | 6,945                               | 7,138          | 7,181                | 201.7                               | 226.9   | 239.4                | 1,400,991                           | 1,619,331        | 1,718,865            |
| Austria.....   | 453                                 | 504            | 506                  | 183.7                               | 171.7   | 203.0                | 83,316                              | 86,827           | 102,712              |
| Czechoslovakia.....  | 1,738                               | 1,819          | 1,842                | 178.4                               | 165.7   | 184.9                | 310,025                             | 301,373          | 285,287              |
| Hungary.....   | 652                                 | 728            | 723                  | 110.8                               | 98.9    | 114.5                | 72,221                              | 68,183           | 82,780               |
| Yugoslavia.....  | 560                                 | 615            | —                    | 74.9                                | 86.8    | —                    | 41,930                              | 53,394           | —                    |
| Rumania.....   | 644                                 | 706            | —                    | 117.8                               | 78.2    | —                    | 75,865                              | 55,183           | —                    |
| Poland.....  | 6,125                               | 6,770          | 6,915                | 158.7                               | 153.8   | 168.8                | 972,152                             | 1,040,941        | 1,167,253            |
| Lithuania.....   | 347                                 | 441            | 452                  | 155.1                               | 132.0   | 210.2                | 53,811                              | 67,035           | 95,009               |
| Latvia.....  | 200                                 | 287            | 266                  | 142.4                               | 200.5   | 199.7                | 28,477                              | 51,535           | 53,123               |
| Estonia.....   | 168                                 | 169            | 177                  | 153.1                               | 206.3   | 168.9                | 26,245                              | 34,899           | 29,891               |
| Finland.....   | 171                                 | 199            | 212                  | 160.9                               | 236.7   | 180.2                | 27,522                              | 47,096           | 38,213               |
| Union of Soviet Socialist<br>Republics.....  | 13,496                              | 13,842         | —                    | 118.8                               | —       | —                    | 1,602,822                           | —                | —                    |
| Total European countries<br>reporting area and production, all<br>years.....                           | 22,715                              | 23,792         | 24,007               | 173.4                               | 182.2   | 190.1                | 3,937,950                           | 4,335,053        | 4,563,891            |
| Estimated European total,<br>excluding Union of Soviet Socialist<br>Republics.....                     | 26,200                              | 27,600         | 27,800               | —                                   | —       | —                    | 4,532,000                           | 4,986,000        | 5,214,000            |
| Total Northern Hemisphere<br>countries reporting area and<br>production, all years.....                | 26,315                              | 27,514         | 27,879               | 165.7                               | 171.8   | 180.4                | 4,360,931                           | 4,726,498        | 5,029,498            |
| Estimated Northern Hemisphere<br>total excluding Union of<br>Soviet Socialist Republics and China..... | 30,700                              | 32,300         | 32,600               | —                                   | —       | —                    | 5,030,000                           | 5,463,000        | 5,766,000            |
| <b>SOUTHERN HEMISPHERE</b>   |                                     |                |                      |                                     |         |                      |                                     |                  |                      |
| Chile.....   | 93                                  | 132            | 133                  | 145.8                               | 133.2   | 168.9                | 13,557                              | 17,576           | 22,461               |
| Argentina.....   | 345                                 | 341            | —                    | 85.9                                | 99.1    | —                    | 29,325                              | 33,778           | —                    |
| Australia.....   | 140                                 | —              | —                    | 95.1                                | —       | —                    | 13,315                              | —                | —                    |
| Estimated Southern Hemisphere<br>total.....  | 2,000                               | 2,400          | —                    | —                                   | —       | —                    | 112,000                             | —                | —                    |
| Estimated world total<br>excluding Union of<br>Soviet Socialist Republics and China.....               | 32,700                              | 34,700         | —                    | —                                   | —       | —                    | 5,142,000                           | 5,612,000        | —                    |

<sup>1</sup> Preliminary.<sup>2</sup> 4-year average.

Bureau of Agricultural Economics. Both acreage and production figures refer to the year of harvest. Harvests of the Northern Hemisphere are combined with those of the Southern Hemisphere which immediately follow; thus, for 1933-34 the crop harvested in the Northern Hemisphere countries in 1933 is combined with the Southern Hemisphere harvest which begins late in 1933 and ends early in 1934.



TABLE 242.—Potatoes: Production of certified seed, by States, average 1925-34, annual 1925-34

| State              | Average<br>1925-34       | 1925                     | 1926                     | 1927                     | 1928                     | 1929                     | 1930                     | 1931                     | 1932                     | 1933                     | 1934 <sup>1</sup>        |
|--------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|                    | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> | <i>1,000<br/>bushels</i> |
| California.....    | 12                       | 12                       | 12                       | 18                       | 12                       | 12                       | 4                        | 8                        | 7                        | 12                       | 21                       |
| Colorado.....      | 147                      | 28                       | 31                       | 77                       | 58                       | 72                       | 52                       | 96                       | 123                      | 506                      | 425                      |
| Idaho.....         | 311                      | 278                      | 371                      | 866                      | 350                      | 204                      | 315                      | 226                      | 151                      | 212                      | 137                      |
| Kentucky.....      | 14                       | 15                       | 23                       | 25                       | 9                        | 21                       | 9                        | 9                        | 12                       | 12                       | 9                        |
| Maine.....         | 3,635                    | 2,226                    | 2,295                    | 3,278                    | 5,094                    | 3,999                    | 2,741                    | 3,944                    | 2,921                    | 3,853                    | 6,003                    |
| Maryland.....      | 43                       | 8                        | 18                       | 32                       | 22                       | 40                       | 17                       | 66                       | 57                       | 73                       | 95                       |
| Michigan.....      | 371                      | 215                      | 337                      | 162                      | 855                      | 741                      | 212                      | 194                      | 371                      | 272                      | 349                      |
| Minnesota.....     | 689                      | 506                      | 694                      | 622                      | 1,163                    | 911                      | 548                      | 662                      | 437                      | 602                      | 659                      |
| Montana.....       | 100                      | 68                       | 113                      | 181                      | 237                      | 72                       | 69                       | 62                       | 64                       | 61                       | 68                       |
| Nebraska.....      | 317                      | 121                      | 60                       | 182                      | 152                      | 463                      | 663                      | 384                      | 392                      | 552                      | 196                      |
| New Hampshire..... | 21                       | 12                       | 3                        | 15                       | 17                       | 9                        | 35                       | 40                       | 13                       | 30                       | 35                       |
| New Jersey.....    | 79                       | 58                       | 93                       | ( <sup>2</sup> )         | 101                      | 62                       | 50                       | 114                      | 84                       | 124                      | 107                      |
| New York.....      | 492                      | 211                      | 225                      | 323                      | 470                      | 572                      | 716                      | 819                      | 550                      | 520                      | 513                      |
| North Dakota.....  | 478                      | 171                      | 182                      | 321                      | 540                      | 412                      | 372                      | 413                      | 825                      | 918                      | 628                      |
| Ohio.....          | 6                        | 4                        | 6                        | 6                        | 6                        | 7                        | 5                        | 6                        | 7                        | 8                        | ( <sup>2</sup> )         |
| Oregon.....        | 122                      | 28                       | 46                       | 88                       | 154                      | 137                      | 74                       | 137                      | 188                      | 185                      | 187                      |
| Pennsylvania.....  | 84                       | 26                       | 41                       | 30                       | 60                       | 70                       | 46                       | 91                       | 103                      | 137                      | 241                      |
| South Dakota.....  | 34                       | 24                       | 29                       | 50                       | 59                       | 63                       | 23                       | 38                       | 40                       | 4                        | 7                        |
| Vermont.....       | 172                      | 109                      | 160                      | 253                      | 136                      | 137                      | 133                      | 219                      | 179                      | 183                      | 210                      |
| Washington.....    | 82                       | 17                       | 30                       | 121                      | 82                       | 77                       | 85                       | 115                      | 93                       | 102                      | 101                      |
| Wisconsin.....     | 237                      | 163                      | 197                      | 243                      | 448                      | 294                      | 261                      | 259                      | 173                      | 150                      | 180                      |
| Wyoming.....       | 202                      | 21                       | 138                      | 260                      | 350                      | 185                      | 300                      | 187                      | 131                      | 304                      | 143                      |
| Total.....         | 7,648                    | 4,411                    | 5,104                    | 7,153                    | 10,375                   | 8,560                    | 6,730                    | 8,089                    | 6,921                    | 8,820                    | 10,314                   |

<sup>1</sup> Preliminary.<sup>2</sup> Less than 500 bushels.

Bureau of Agricultural Economics. Compiled from reports of State seed-potato certifying agencies.

TABLE 243.—Potatoes: Car-lot shipments, United States, by months, 1925-34

| Year                    | Jan.        | Feb.        | Mar.        | Apr.        | May         | June        | July        | Aug.        | Sept.       | Oct.        | Nov.        | Dec.        | Total       |
|-------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                         | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> |
| 1925.....               | 21,715      | 20,394      | 21,639      | 20,123      | 20,215      | 19,798      | 17,765      | 14,864      | 23,569      | 33,631      | 16,286      | 11,524      | 241,523     |
| 1926.....               | 16,185      | 14,834      | 19,974      | 14,288      | 16,903      | 23,637      | 20,310      | 15,327      | 22,978      | 36,182      | 18,419      | 13,487      | 232,424     |
| 1927.....               | 17,974      | 17,784      | 21,497      | 20,283      | 16,691      | 22,155      | 21,053      | 17,853      | 25,003      | 38,333      | 21,124      | 13,695      | 253,445     |
| 1928.....               | 20,278      | 22,913      | 23,710      | 17,255      | 23,740      | 29,675      | 21,048      | 16,252      | 21,127      | 29,906      | 18,232      | 13,207      | 257,343     |
| 1929.....               | 20,066      | 20,472      | 23,059      | 20,153      | 20,360      | 24,813      | 19,583      | 17,395      | 24,441      | 31,958      | 15,706      | 15,158      | 253,194     |
| 1930.....               | 20,302      | 19,918      | 22,106      | 19,769      | 22,803      | 25,004      | 22,328      | 16,775      | 22,415      | 29,076      | 16,502      | 15,413      | 252,411     |
| 1931.....               | 21,241      | 20,321      | 23,888      | 21,461      | 24,080      | 27,276      | 20,434      | 12,015      | 17,715      | 24,759      | 14,510      | 13,303      | 241,003     |
| 1932.....               | 17,767      | 18,923      | 24,876      | 21,436      | 18,385      | 22,095      | 15,932      | 8,465       | 12,924      | 14,496      | 11,941      | 12,118      | 199,358     |
| 1933.....               | 16,745      | 16,518      | 24,535      | 18,206      | 18,203      | 21,380      | 12,016      | 10,797      | 17,475      | 21,942      | 13,624      | 12,441      | 204,082     |
| 1934 <sup>1</sup> ..... | 21,924      | 17,323      | 23,839      | 19,887      | 21,611      | 25,746      | 17,826      | 11,517      | 14,786      | 21,847      | 14,844      | 12,066      | 223,216     |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis, 400 to 700 bushels to a carload. Shipments by truck not included. Data for earlier years in 1928 Yearbook, table 208.

TABLE 244.—Potatoes: Car-lot shipments, by State of origin, 1924-33

| State               | Crop-movement season <sup>1</sup> |             |             |             |             |             |             |             |             |                   |
|---------------------|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|
|                     | 1924                              | 1925        | 1926        | 1927        | 1928        | 1929        | 1930        | 1931        | 1932        | 1933 <sup>2</sup> |
|                     | <i>Cars</i>                       | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i>       |
| Maine.....          | 43, 145                           | 33, 830     | 42, 607     | 40, 945     | 41, 111     | 61, 404     | 53, 381     | 53, 224     | 44, 043     | 48, 756           |
| New Hampshire.....  | 67                                | 405         | 130         | 163         | 118         | 119         | 268         | 71          | 19          | 22                |
| Vermont.....        | 161                               | 144         | 247         | 223         | 145         | 163         | 503         | 224         | 97          | 70                |
| New York.....       | 20, 123                           | 11, 598     | 12, 573     | 12, 320     | 13, 478     | 9, 208      | 13, 712     | 10, 469     | 8, 058      | 7, 153            |
| New Jersey.....     | 8, 637                            | 3, 355      | 4, 750      | 6, 676      | 5, 367      | 3, 811      | 6, 600      | 5, 179      | 3, 171      | 5, 540            |
| Pennsylvania.....   | 3, 943                            | 6, 027      | 2, 630      | 3, 375      | 5, 829      | 2, 132      | 600         | 634         | 194         | 573               |
| Ohio.....           | 66                                | 617         | 265         | 339         | 296         | 493         | 264         | 144         | 94          | 36                |
| Indiana.....        | 50                                | 398         | 163         | 128         | 191         | 118         | 49          | 12          | 20          | 1                 |
| Illinois.....       | 270                               | 151         | 112         | 14          | 94          | 32          | 54          | 76          | 55          | 9                 |
| Michigan.....       | 17, 450                           | 14, 201     | 16, 455     | 8, 568      | 14, 189     | 6, 337      | 3, 379      | 8, 856      | 9, 946      | 5, 129            |
| Wisconsin.....      | 16, 031                           | 16, 025     | 18, 153     | 15, 455     | 15, 850     | 14, 709     | 10, 484     | 13, 351     | 9, 630      | 5, 218            |
| Minnesota.....      | 31, 695                           | 23, 163     | 25, 049     | 33, 482     | 20, 456     | 22, 923     | 16, 346     | 19, 209     | 14, 362     | 17, 123           |
| Iowa.....           | 554                               | 220         | 92          | 149         | 427         | 674         | 342         | 171         | 367         | 659               |
| Missouri.....       | 1, 184                            | 919         | 1, 616      | 1, 294      | 2, 362      | 984         | 2, 016      | 1, 473      | 2, 305      | 1, 599            |
| North Dakota.....   | 6, 063                            | 4, 810      | 4, 815      | 7, 953      | 6, 333      | 6, 026      | 4, 687      | 7, 277      | 4, 526      | 8, 890            |
| South Dakota.....   | 1, 886                            | 1, 024      | 518         | 2, 537      | 1, 403      | 2, 144      | 749         | 79          | 1, 350      | 552               |
| Nebraska.....       | 2, 918                            | 4, 342      | 3, 223      | 6, 039      | 4, 784      | 7, 212      | 9, 160      | 8, 307      | 4, 294      | 9, 316            |
| Kansas.....         | 4, 737                            | 2, 765      | 4, 062      | 4, 341      | 4, 843      | 2, 440      | 3, 556      | 2, 710      | 3, 124      | 1, 657            |
| Delaware.....       | 90                                | 30          | 52          | 214         | 27          | 54          | 8           | 24          | 13          | 66                |
| Maryland.....       | 2, 079                            | 1, 612      | 2, 031      | 3, 545      | 3, 123      | 2, 426      | 2, 240      | 1, 752      | 1, 616      | 1, 147            |
| Virginia.....       | 23, 608                           | 15, 882     | 10, 212     | 23, 717     | 27, 679     | 21, 177     | 21, 731     | 18, 644     | 12, 823     | 9, 826            |
| West Virginia.....  | 88                                | 88          | 119         | 177         | 860         | 412         | 87          | 165         | 138         | 23                |
| North Carolina..... | 6, 568                            | 4, 040      | 6, 713      | 7, 555      | 9, 736      | 6, 003      | 7, 355      | 8, 681      | 5, 876      | 7, 044            |
| South Carolina..... | 5, 263                            | 3, 674      | 5, 223      | 3, 943      | 4, 706      | 3, 809      | 4, 544      | 5, 030      | 1, 666      | 2, 009            |
| Georgia.....        | 544                               | 255         | 373         | 489         | 321         | 272         | 576         | 808         | 247         | 230               |
| Florida.....        | 4, 382                            | 5, 137      | 4, 809      | 5, 410      | 7, 744      | 5, 039      | 4, 802      | 6, 892      | 2, 584      | 4, 035            |
| Kentucky.....       | 1, 593                            | 735         | 430         | 877         | 718         | 1, 211      | 513         | 447         | 501         | 335               |
| Tennessee.....      | 223                               | 249         | 313         | 276         | 436         | 272         | 267         | 128         | 119         | 344               |
| Alabama.....        | 2, 920                            | 1, 046      | 2, 222      | 2, 102      | 3, 133      | 1, 541      | 2, 728      | 4, 712      | 1, 874      | 2, 151            |
| Mississippi.....    | 202                               | 30          | 68          | 68          | 147         | 114         | 119         | 368         | 188         | 131               |
| Arkansas.....       | 449                               | 537         | 526         | 508         | 739         | 514         | 814         | 837         | 483         | 683               |
| Louisiana.....      | 1, 425                            | 1, 280      | 1, 420      | 1, 298      | 1, 227      | 1, 102      | 2, 327      | 4, 410      | 1, 656      | 2, 102            |
| Oklahoma.....       | 1, 262                            | 2, 335      | 2, 164      | 2, 130      | 2, 058      | 2, 208      | 2, 755      | 2, 171      | 1, 893      | 1, 366            |
| Texas.....          | 1, 422                            | 1, 431      | 2, 014      | 3, 031      | 3, 468      | 2, 769      | 5, 480      | 5, 045      | 3, 504      | 2, 354            |
| Montana.....        | 420                               | 1, 509      | 888         | 1, 376      | 755         | 380         | 537         | 393         | 222         | 369               |
| Idaho.....          | 11, 942                           | 18, 271     | 17, 329     | 28, 305     | 18, 887     | 19, 011     | 32, 903     | 25, 916     | 22, 526     | 30, 066           |
| Wyoming.....        | 652                               | 998         | 763         | 2, 021      | 1, 385      | 1, 731      | 2, 775      | 2, 142      | 821         | 2, 436            |
| Colorado.....       | 12, 386                           | 15, 422     | 14, 200     | 17, 328     | 13, 714     | 15, 366     | 18, 080     | 7, 529      | 7, 266      | 12, 935           |
| Arizona.....        | 15                                | 27          | 64          | 61          | 75          | 50          | 49          | 80          | 70          | 73                |
| Utah.....           | 727                               | 1, 162      | 1, 078      | 954         | 454         | 939         | 1, 044      | 954         | 613         | 723               |
| Nevada.....         | 452                               | 719         | 780         | 942         | 595         | 442         | 593         | 248         | 223         | 201               |
| Washington.....     | 6, 654                            | 8, 850      | 9, 842      | 9, 802      | 8, 054      | 8, 097      | 7, 988      | 6, 993      | 4, 996      | 5, 920            |
| Oregon.....         | 927                               | 1, 494      | 2, 719      | 2, 339      | 1, 653      | 1, 560      | 2, 581      | 3, 062      | 2, 515      | 4, 110            |
| California.....     | 6, 492                            | 6, 159      | 7, 184      | 7, 904      | 7, 656      | 7, 769      | 7, 887      | 6, 969      | 5, 742      | 8, 757            |
| Other States.....   | 10                                | 55          | 45          | 50          | 23          | 58          | 39          | 21          | 95          | 50                |
| Total.....          | 252, 450                          | 221, 621    | 237, 028    | 270, 209    | 256, 165    | 245, 285    | 257, 577    | 245, 823    | 185, 965    | 210, 761          |

<sup>1</sup> Crop-movement season covers 10 months, from December through the second following June; i. e., the 1924 season begins in December 1923 and ends June 1925.

<sup>2</sup> Preliminary beginning January 1934.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis, 400 to 700 bushels to a car-load. Shipments by truck not included.

TABLE 245.—Potatoes: Average price per bushel received by producers, United States, 1925-26 to 1934-35

| Year         | July 15      | Aug. 15      | Sept. 15     | Oct. 15      | Nov. 15      | Dec. 15      | Jan. 15      | Feb. 15      | Mar. 15      | Apr. 15      | May 15       | June 15      | Weighted average |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------------------|
|              | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i>     |
| 1925-26..... | 125.5        | 155.4        | 121.1        | 125.6        | 198.4        | 201.6        | 220.5        | 226.0        | 225.0        | 270.5        | 244.8        | 190.1        | 165.3            |
| 1926-27..... | 174.6        | 140.5        | 130.6        | 126.4        | 141.3        | 137.0        | 139.1        | 134.1        | 127.0        | 126.8        | 145.0        | 181.0        | 128.3            |
| 1927-28..... | 188.1        | 146.3        | 107.4        | 87.9         | 95.4         | 94.1         | 93.6         | 96.2         | 113.1        | 116.8        | 108.9        | 83.6         | 108.9            |
| 1928-29..... | 77.4         | 71.9         | 64.8         | 58.0         | 55.9         | 57.7         | 55.9         | 59.5         | 58.4         | 55.3         | 59.8         | 64.0         | 57.2             |
| 1929-30..... | 87.7         | 139.1        | 136.0        | 138.2        | 134.8        | 135.3        | 137.8        | 139.1        | 136.3        | 145.8        | 149.9        | 148.6        | 131.5            |
| 1930-31..... | 129.4        | 108.8        | 106.9        | 101.4        | 95.0         | 89.8         | 90.3         | 86.7         | 84.9         | 90.8         | 87.0         | 75.3         | 91.5             |
| 1931-32..... | 82.5         | 76.7         | 60.1         | 45.8         | 45.3         | 45.7         | 47.1         | 44.8         | 45.7         | 46.4         | 47.0         | 44.4         | 46.4             |
| 1932-33..... | 48.8         | 51.4         | 38.0         | 34.4         | 34.4         | 36.8         | 37.4         | 39.0         | 42.4         | 43.7         | 49.4         | 39.5         | 39.5             |
| 1933-34..... | 97.9         | 131.0        | 100.8        | 74.9         | 68.8         | 69.4         | 77.2         | 87.7         | 92.0         | 83.4         | 73.7         | 64.4         | 82.3             |
| 1934-35..... | 66.9         | 68.0         | 62.8         | 49.0         | 45.9         | 45.4         | -----        | -----        | -----        | -----        | -----        | -----        | 51.7             |

<sup>1</sup> Preliminary

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 Yearbook, table 210. Only monthly prices are comparable.

TABLE 246.—Potatoes: Average price per 100 pounds to jobbers, New York and Chicago, 1919-20 to 1934-35

NEW YORK, LESS-THAN-CAR-LOT PRICE TO JOBBERS

| Season  | Jan. | Feb. | Mar.   | Apr. | May    | June   | July   | Aug.   | Sept.  | Oct.   | Nov.   | Dec.   | Jan.   | Feb.   | Mar.   | Apr.   | May    | June   |
|---------|------|------|--------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1919-20 |      |      |        |      | \$4.29 | \$4.37 | \$3.43 | \$3.39 | \$2.79 | \$2.57 | \$2.63 | \$3.00 | \$4.23 | \$4.49 | \$5.49 | \$7.68 | \$7.19 |        |
| 1920-21 |      |      |        |      | 9.03   | 9.93   | 5.54   | 2.56   | 1.83   | 1.93   | 1.96   | 1.82   | 2.33   | 2.18   | 2.03   | 1.28   | 1.58   |        |
| 1921-22 |      |      |        | 4.41 | 4.13   | 1.90   | 2.23   | 2.90   | 2.11   | 2.09   | 1.92   | 2.07   | 2.33   | 2.31   | 2.03   | 1.70   | 1.70   |        |
| 1922-23 |      |      |        | 7.24 | 3.27   | 3.03   | 1.81   | 1.04   | 0.95   | 0.96   | 1.22   | 1.39   | 1.96   | 2.01   | 1.87   | 2.02   | 1.73   | \$1.52 |
| 1923-24 |      |      |        | 7.24 | 4.13   | 3.08   | 3.08   | 2.57   | 1.40   | 1.35   | 1.22   | 1.59   | 1.96   | 2.01   | 1.96   | 2.12   | 1.73   |        |
| 1924-25 |      |      |        | 5.92 | 4.12   | 2.84   | 1.46   | 1.43   | 1.37   | 1.33   | 1.23   | 1.26   | 1.46   | 1.56   | 1.21   | 1.20   | 1.36   |        |
| 1925-26 |      |      | \$5.33 | 4.03 | 3.34   | 2.83   | 3.18   | 2.83   | 2.43   | 3.23   | 4.09   | 4.20   | 4.61   | 4.57   | 4.67   | 5.64   | 4.10   | 3.35   |
| 1926-27 |      |      | 17.08  | 8.84 | 6.29   | 3.78   | 2.29   | 2.35   | 2.57   | 2.89   | 2.90   | 2.92   | 2.80   | 2.48   | 2.45   | 2.68   | 3.64   | 4.00   |
| 1927-28 |      |      |        | 4.15 | 4.60   | 4.03   | 2.07   | 1.83   | 2.11   | 2.26   | 2.26   | 2.12   | 2.25   | 2.64   | 1.96   | 1.48   | 1.67   | 1.32   |
| 1928-29 |      |      |        | 6.32 | 2.89   | 1.64   | 1.02   | 1.24   | 1.34   | 1.37   | 1.32   | 1.41   | 1.52   | 1.45   | 1.36   | 2.99   | 2.74   | 2.41   |
| 1929-30 |      |      |        | 4.13 | 3.27   | 2.80   | 2.80   | 1.71   | 1.61   | 3.14   | 3.03   | 3.05   | 3.14   | 3.08   | 2.77   | 2.05   | 1.81   | .69    |
| 1930-31 |      |      |        | 4.70 | 4.15   | 2.80   | 1.71   | 1.61   | 2.03   | 1.91   | 1.78   | 1.04   | 2.13   | 1.11   | 1.14   | 1.13   | 1.01   | 1.22   |
| 1931-32 |      |      |        | 4.81 | 2.49   | 1.60   | 1.31   | 1.22   | .97    | .96    | 1.06   | 1.11   | 1.14   | 1.11   | 1.12   | 1.11   | 1.01   | 1.24   |
| 1932-33 |      |      |        | 3.14 | 4.27   | 1.71   | 1.28   | .91    | .89    | .84    | 1.06   | 1.16   | 1.14   | 1.11   | 1.12   | 1.11   | 1.01   | 1.24   |
| 1933-34 |      |      |        | 2.94 | 2.06   | 1.97   | 2.73   | 2.30   | 2.11   | 1.84   | 1.67   | 1.60   | 2.06   | 2.03   | 2.32   | 2.03   | 1.62   |        |
| 1934-35 |      |      |        | 3.23 | 2.63   | 1.46   | .95    | .93    | 1.00   | .92    | 1.00   | .99    |        |        |        |        |        |        |

CHICAGO, CAR-LOT SALES PRICE TO JOBBERS

| Season  | Jan. | Feb. | Mar. | Apr. | May    | June   | July   | Aug.   | Sept.  | Oct.   | Nov.   | Dec.   | Jan.   | Feb.   | Mar.   | Apr.   | May    | June |
|---------|------|------|------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|
| 1919-20 |      |      |      |      | \$5.32 | \$4.33 | \$4.18 | \$3.99 | \$2.73 | \$2.40 | \$2.90 | \$3.17 | \$4.47 | \$4.33 | \$5.47 | \$5.97 | \$7.43 |      |
| 1920-21 |      |      |      |      | 10.05  | 8.02   | 6.40   | 3.43   | 2.41   | 1.85   | 2.09   | 1.51   | 1.25   | 1.16   | 1.25   | 1.25   | 1.60   | 1.25 |
| 1921-22 |      |      |      |      | 3.35   | 2.41   | 2.46   | 2.16   | 2.64   | 1.88   | 1.62   | 1.80   | 1.98   | 1.89   | 1.77   | 1.64   | .98    | 1.05 |
| 1922-23 |      |      |      |      | 3.80   | 3.21   | 2.21   | 2.45   | 1.64   | 1.18   | .88    | .88    | .91    | .96    | 1.36   | 1.32   | 1.02   | 1.86 |
| 1923-24 |      |      |      |      | 5.05   | 3.21   | 2.78   | 2.18   | 1.69   | 1.06   | .99    | 1.06   | 1.40   | 1.34   | 1.09   | .84    | 1.27   | 1.46 |
| 1924-25 |      |      |      |      | 3.42   | 2.96   | 3.21   | 2.88   | 1.83   | .86    | .98    | 1.20   | 1.13   | 1.11   | 1.09   | 1.32   | 1.16   | 1.24 |
| 1925-26 |      |      |      |      | 2.82   | 2.96   | 3.21   | 2.68   | 1.99   | 2.66   | 3.45   | 3.65   | 4.03   | 1.98   | 1.96   | 4.01   | 3.09   | 2.78 |
| 1926-27 |      |      |      |      | 6.57   | 3.91   | 2.35   | 2.22   | 2.45   | 2.47   | 2.41   | 1.53   | 1.63   | 1.62   | 1.78   | 2.17   | 3.18   | 3.91 |
| 1927-28 |      |      |      |      | 4.48   | 4.05   | 2.30   | 2.02   | 1.70   | 1.53   | .89    | .92    | 1.00   | 1.00   | .85    | 1.85   | 1.40   | .84  |
| 1928-29 |      |      |      |      | 3.10   | 1.74   | 1.16   | 1.06   | 1.04   | .91    | 2.31   | 2.34   | 2.57   | 2.49   | 2.44   | 2.87   | .81    |      |
| 1929-30 |      |      |      |      | 4.04   | 2.71   | 2.78   | 2.43   | 2.49   | 2.40   | 1.63   | 1.55   | 1.63   | 1.60   | 1.59   | 1.66   | 1.29   |      |
| 1930-31 |      |      |      |      | 3.57   | 3.01   | 1.82   | 1.89   | 1.55   | .80    | .92    | 1.02   | .98    | .94    | .99    | .90    | .82    | 80   |
| 1931-32 |      |      |      |      | 4.43   | 1.86   | 1.58   | 1.45   | 1.05   | .80    | .92    | 1.02   | .98    | .94    | .99    | .90    | .83    |      |
| 1932-33 |      |      |      |      | 3.48   | 2.47   | 1.14   | 1.77   | .79    | .65    | .85    | .85    | .83    | .80    | .93    | .71    | .71    |      |
| 1933-34 |      |      |      |      | 3.09   | 2.24   | 3.04   | 2.63   | 1.71   | 1.31   | 1.30   | 1.37   | 1.87   | 2.03   | 1.72   | 1.47   | 1.23   |      |
| 1934-35 |      |      |      |      | 2.24   | 1.57   | 1.45   | 1.04   | 1.37   | 1.20   | 1.23   | 1.20   |        |        |        |        |        |      |

<sup>1</sup> Less than 10 quotations.

<sup>2</sup> Street sales.

<sup>3</sup> Less-than-car-lot sales to jobbers.

Bureau of Agricultural Economics.

Compiled from daily market reports from Bureau representatives in the markets. Average prices as shown are based on stock of U. S. No. 1 grade; they are simple averages of daily change of selling prices. In some cases conversions were made from larger to smaller units, or vice versa, in order to obtain comparability. Prices do not include Russet Burbanks.

In this table the potato season begins in January of one year and extends through June of the next year. Thus the \$7.19 in May 1920 on first line is the price of the last of old-crop potatoes, and the \$6.03 in May 1920 on second line is the price of early or new-crop potatoes that month.

TABLE 247.—*Potatoes, Idaho, Russet Burbanks: Average car-lot price per 100 pounds to jobbers at Chicago, 1924-25 to 1934-35*

| Season  | Aug.   | Sept.  | Oct.   | Nov.   | Dec.   | Jan.   | Feb.   | Mar.   | Apr.   | May    |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1924-25 |        |        |        | \$2.04 |        | \$2.30 | \$2.59 | \$2.41 | \$2.44 |        |
| 1925-26 |        |        |        | 3.99   | \$3.67 | 4.19   | 3.95   | 4.15   | 4.78   | \$3.51 |
| 1926-27 |        |        | \$2.84 | 2.93   | 2.75   | 2.83   | 2.75   | 2.88   | 3.24   | 4.24   |
| 1927-28 |        | \$2.33 | 1.78   | 1.75   | 1.59   | 1.73   | 1.89   | 2.51   | 1.97   | 1.50   |
| 1928-29 |        |        | 1.63   | 1.65   | 1.60   | 1.64   | 1.68   | 1.60   | 1.83   | 1.95   |
| 1929-30 |        | 3.11   | 2.98   | 2.86   | 2.88   | 3.18   | 3.14   | 3.19   | 3.79   | 3.59   |
| 1930-31 | \$2.48 | 2.71   | 2.18   | 1.88   | 1.82   | 1.84   | 1.62   | 1.67   | 1.70   | 1.51   |
| 1931-32 | 1.84   | 1.72   | 1.43   | 1.39   | 1.52   | 1.54   | 1.40   | 1.38   | 1.32   | 1.25   |
| 1932-33 |        | 1.30   | 1.14   | 1.19   | 1.17   | 1.19   | 1.23   | 1.22   | 1.37   | 1.43   |
| 1933-34 | 2.08   | 2.00   | 1.61   | 1.63   | 1.61   | 1.96   | 2.10   | 1.91   | 1.66   | 1.44   |
| 1934-35 | 1.72   | 1.73   | 1.51   | 1.57   | 1.55   |        |        |        |        |        |

<sup>1</sup> Less-than-car-lot sales to jobbers.

Bureau of Agricultural Economics; compiled from daily market reports from the Bureau representative at the market.

Average prices as shown are based on stock of U. S. No. 1 grade; they are simple averages of daily range of selling prices.

TABLE 248.—*Potatoes: International trade, average 1925-29, annual 1930-33*

| Country                             | Calendar year   |               |               |               |               |               |               |               |                   |               |
|-------------------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------------|---------------|
|                                     | Average 1925-29 |               | 1930          |               | 1931          |               | 1932          |               | 1933 <sup>1</sup> |               |
|                                     | Exports         | Imports       | Exports       | Imports       | Exports       | Imports       | Exports       | Imports       | Exports           | Imports       |
| PRINCIPAL EXPORTING COUNTRIES       | 1,000 bushels   | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels     | 1,000 bushels |
| Netherlands                         | 17,967          | 659           | 20,602        | 373           | 18,678        | 1,072         | 18,532        | 393           | 9,414             | 341           |
| Belgium                             | 9,012           | 5,090         | 9,726         | 9,552         | 9,958         | 10,880        | 9,993         | 6,163         | 1,168             | 4,384         |
| Italy                               | 7,761           | 1,933         | 4,853         | 1,900         | 4,533         | 4,215         | 4,987         | 1,939         | 4,249             | 1,150         |
| Canada                              | 7,118           | 668           | 7,128         | 844           | 6,136         | 329           | 2,061         | 188           | 1,825             | 180           |
| Poland                              | 3,855           | 12            | 1,478         | 94            | 4,794         | 9             | 2,634         | 5             | 882               | 1             |
| Hungary                             | 2,773           | 202           | 1,599         | 94            | 3,089         | 53            | 755           | 14            | 672               | 17            |
| Spain                               | 2,341           | 1,226         | 2,676         | 762           | 4,018         | 748           | 6,244         | 751           | 3,510             | 659           |
| Argentina                           | 2,183           | 213           | 2,616         | 557           | 1,591         | 18            | 1,393         | 70            | 1,193             | 596           |
| Algeria                             | 1,475           | 1,413         | 1,552         | 1,898         | 1,075         | 1,837         | 1,395         | 2,009         | 1,749             | 1,592         |
| Czechoslovakia                      | 1,032           | 951           | 347           | 443           | 139           | 423           | 88            | 293           | 1                 | 443           |
| Estonia                             | 836             | 1             | 412           | 0             | 974           | 1             | 621           | 0             | 175               | 0             |
| Irish Free State                    | 855             | 647           | 386           | 557           | 1,271         | 320           | 1,038         | 161           | 485               | 0             |
| Union of Soviet Socialist Republics | 756             | 0             | 1             | 0             | 4             | 0             | 0             | 0             | 0                 | 0             |
| Japan                               | 606             | 0             | 752           | 0             | 772           | 0             | 662           | 0             | 867               | 0             |
| China                               | 193             | 0             | 365           | 0             | 455           | 0             | 449           | 62            | 393               | 32            |
| Total                               | 58,808          | 13,104        | 54,693        | 17,054        | 57,487        | 19,902        | 50,852        | 12,048        | 26,683            | 9,200         |
| PRINCIPAL IMPORTING COUNTRIES       |                 |               |               |               |               |               |               |               |                   |               |
| Germany                             | 5,346           | 16,623        | 3,671         | 11,755        | 18,175        | 4,355         | 7,425         | 4,613         | 1,259             | 2,619         |
| United Kingdom                      | 2,779           | 14,071        | 2,066         | 10,735        | 1,694         | 31,039        | 1,953         | 28,979        | 1,610             | 7,333         |
| France                              | 9,850           | 12,205        | 7,563         | 9,191         | 6,798         | 16,332        | 2,938         | 8,026         | 2,378             | 3,530         |
| United States                       | 2,434           | 4,284         | 1,899         | 5,060         | 1,060         | 4,567         | 912           | 727           | 719               | 1,180         |
| Cuba                                | 75              | 3,903         | 83            | 2,393         | 61            | 1,149         | 27            | 974           |                   |               |
| Austria                             | 865             | 2,596         | 223           | 1,625         | 204           | 966           | 241           | 604           | 11                | 661           |
| Switzerland                         | 4               | 2,526         | 1             | 3,386         | 4             | 2,694         | 3             | 2,236         | 1                 | 1,594         |
| Portugal                            | 120             | 1,748         | 63            | 2,459         | 140           | 1,069         | 218           | 0             |                   |               |
| Uruguay                             | 1               | 1,483         | 0             | 1,346         | 0             | 917           | 0             | 1,255         |                   |               |
| Brazil                              | 0               | 1,132         | 0             | 1,093         | 4             | 265           | 3             | 219           |                   | 416           |
| Egypt                               | 139             | 845           | 43            | 765           | 242           | 544           | 121           | 603           | 32                | 538           |
| Denmark                             | 67              | 719           | 38            | 332           | 794           | 210           | 980           | 72            | 75                | 4             |
| Finland                             | 1               | 624           | 0             | 256           | 7             | 81            | 7             | 106           |                   | 177           |
| Yugoslavia                          | 98              | 469           | 67            | 84            | 34            | 25            | 4             | 139           | 6                 | 15            |
| Sweden                              | 36              | 422           | 1             | 74            | 28            | 543           | 294           | 158           | 5                 | 18            |
| Tunis                               | 2               | 411           | 1             | 510           | 2             | 482           | 1             | 499           | 0                 | 494           |
| Philippine Islands                  | 0               | 358           | 0             | 340           | 0             | 468           | 0             | 457           | 0                 |               |
| Venezuela                           | 0               | 161           | 0             | 260           | 0             | 269           | 0             | 229           | 0                 | 196           |
| Norway                              | 44              | 62            | 21            | 1             | 228           | 28            | 479           | 0             | 57                | 0             |
| Total                               | 21,861          | 64,492        | 15,741        | 52,145        | 29,445        | 66,023        | 15,606        | 50,331        | 6,153             | 18,775        |

<sup>1</sup> Preliminary.

<sup>2</sup> 3-year average.

<sup>3</sup> International Yearbook of Agricultural Statistics.

Bureau of Agricultural Economics; official sources except where otherwise noted. These figures do not include sweetpotatoes.

TABLE 249.—*Sweetpotatoes: Acreage, production, weighted average price per bushel received by producers, and value, United States, 1919-34*

| Year      | Acreage harvested | Average yield per acre | Production    | Price | Farm value, basis weighted average price | Year                    | Acreage harvested | Average yield per acre | Production    | Price | Farm value, basis weighted average price |
|-----------|-------------------|------------------------|---------------|-------|--|-------------------------|-------------------|------------------------|---------------|-------|--|
|           | 1,000 acres       | Bushels                | 1,000 bushels | Cents | 1,000 dollars                            |                         | 1,000 acres       | Bushels                | 1,000 bushels | Cents | 1,000 dollars                            |
| 1919..... | 303               | 87.3                   | 78,092        |       |  | 1927.....               | 724               | 93.3                   | 71,156        | 109.0 | 77,539                                   |
| 1919..... | 792               | 99.0                   | 78,422        | 169.2 | 132,676                                  | 1928.....               | 638               | 93.5                   | 59,650        | 118.4 | 70,637                                   |
| 1920..... | 768               | 100.4                  | 77,124        | 141.9 | 109,416                                  | 1929.....               | 650               | 100.3                  | 65,193        |       |  |
| 1921..... | 819               | 90.3                   | 73,958        | 113.5 | 83,947                                   | 1929.....               | 646               | 100.6                  | 64,963        | 117.1 | 76,081                                   |
| 1922..... | 819               | 96.1                   | 78,665        | 100.8 | 79,306                                   | 1930.....               | 649               | 81.8                   | 53,117        | 108.2 | 57,482                                   |
| 1923..... | 675               | 94.9                   | 64,041        | 121.0 | 77,474                                   | 1931.....               | 785               | 80.3                   | 63,043        | 72.5  | 45,688                                   |
| 1924..... | 467               | 80.2                   | 37,444        |       |  | 1932.....               | 926               | 84.7                   | 78,431        | 53.7  | 42,154                                   |
| 1924..... | 567               | 79.7                   | 45,201        | 150.0 | 67,790                                   | 1933.....               | 759               | 85.8                   | 65,134        | 69.7  | 45,411                                   |
| 1925..... | 637               | 78.2                   | 49,845        | 165.4 | 82,448                                   | 1934 <sup>1</sup> ..... | 762               | 88.5                   | 67,400        | 80.7  | 54,389                                   |
| 1926..... | 646               | 98.3                   | 63,531        | 117.5 | 74,629                                   |                         |                   |                        |               |       |  |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics.

Acreage, yield, and production figures are estimates of the Crop Reporting Board, revised 1919-28. See introductory text. Italic figures are census returns. Prices are based upon returns from crop reporters.

TABLE 250.—*Sweetpotatoes: Acreage, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934*

| State               | Acreage harvested |             |                   | Yield per acre   |      |                   | Production       |               |                   | Price for crop of— |                   |
|---------------------|-------------------|-------------|-------------------|------------------|------|-------------------|------------------|---------------|-------------------|--------------------|-------------------|
|                     | Average, 1927-31  | 1933        | 1934 <sup>1</sup> | Average, 1927-31 | 1933 | 1934 <sup>1</sup> | Average, 1927-31 | 1933          | 1934 <sup>1</sup> | 1933               | 1934 <sup>1</sup> |
|                     | 1,000 acres       | 1,000 acres | 1,000 acres       | Bu.              | Bu.  | Bu.               | 1,000 bushels    | 1,000 bushels | 1,000 bushels     | Cents              | Cents             |
| New Jersey.....     | 12                | 12          | 13                | 128              | 175  | 155               | 1,580            | 2,100         | 2,015             | 80                 | 89                |
| Indiana.....        | 3                 | 4           | 4                 | 118              | 100  | 110               | 337              | 400           | 440               | 97                 | 95                |
| Illinois.....       | 5                 | 6           | 7                 | 91               | 70   | 80                | 478              | 420           | 580               | 89                 | 80                |
| Iowa.....           | 2                 | 3           | 3                 | 91               | 90   | 60                | 231              | 270           | 180               | 132                | 131               |
| Missouri.....       | 9                 | 10          | 11                | 94               | 75   | 51                | 847              | 750           | 561               | 87                 | 96                |
| Kansas.....         | 5                 | 5           | 5                 | 117              | 98   | 65                | 531              | 490           | 325               | 95                 | 122               |
| Delaware.....       | 7                 | 7           | 6                 | 135              | 130  | 135               | 898              | 910           | 810               | 77                 | 70                |
| Maryland.....       | 9                 | 6           | 5                 | 151              | 180  | 150               | 1,493            | 960           | 750               | 67                 | 79                |
| Virginia.....       | 37                | 35          | 34                | 127              | 111  | 115               | 4,602            | 3,885         | 3,910             | 66                 | 76                |
| North Carolina..... | 69                | 85          | 82                | 98               | 93   | 108               | 6,794            | 7,905         | 8,856             | 66                 | 77                |
| South Carolina..... | 48                | 56          | 54                | 82               | 83   | 82                | 4,247            | 4,648         | 4,428             | 63                 | 71                |
| Georgia.....        | 86                | 95          | 89                | 76               | 80   | 80                | 6,488            | 7,600         | 7,120             | 68                 | 93                |
| Florida.....        | 20                | 21          | 20                | 85               | 70   | 90                | 1,710            | 1,470         | 1,800             | 75                 | 96                |
| Kentucky.....       | 16                | 20          | 19                | 88               | 92   | 95                | 1,331            | 1,840         | 1,805             | 79                 | 70                |
| Tennessee.....      | 57                | 50          | 60                | 97               | 90   | 103               | 5,165            | 4,500         | 6,130             | 74                 | 66                |
| Alabama.....        | 70                | 78          | 81                | 84               | 71   | 94                | 5,929            | 5,396         | 7,614             | 71                 | 87                |
| Mississippi.....    | 54                | 63          | 71                | 92               | 90   | 106               | 5,362            | 5,670         | 7,626             | 65                 | 70                |
| Arkansas.....       | 26                | 28          | 27                | 90               | 85   | 60                | 2,363            | 2,380         | 1,620             | 66                 | 86                |
| Louisiana.....      | 69                | 74          | 80                | 74               | 70   | 73                | 5,253            | 5,180         | 5,840             | 65                 | 73                |
| Oklahoma.....       | 17                | 15          | 14                | 87               | 78   | 55                | 1,461            | 1,170         | 770               | 63                 | 89                |
| Texas.....          | 55                | 78          | 68                | 77               | 80   | 50                | 4,200            | 6,240         | 3,300             | 65                 | 90                |
| California.....     | 11                | 10          | 11                | 101              | 95   | 90                | 1,043            | 950           | 990               | 120                | 90                |
| United States.....  | 688               | 759         | 762               | 90.2             | 85.8 | 88.5              | 62,386           | 65,134        | 67,400            | 69.7               | 80.7              |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 251.—Sweetpotatoes: Car-lot shipments, by State of origin, 1924-25 to 1933-34

| State               | Crop-movement season <sup>1</sup> |             |             |             |             |             |             |             |             |                      |
|---------------------|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------|
|                     | 1924-25                           | 1925-26     | 1926-27     | 1927-28     | 1928-29     | 1929-30     | 1930-31     | 1931-32     | 1932-33     | 1933-34 <sup>2</sup> |
|                     | <i>Cars</i>                       | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i>          |
| New Jersey.....     | 1,894                             | 1,357       | 1,770       | 1,225       | 1,223       | 1,090       | 1,078       | 1,531       | 844         | 1,554                |
| Indiana.....        | 103                               | 236         | 284         | 209         | 231         | 352         | 355         | 484         | 319         | 112                  |
| Illinois.....       | 73                                | 101         | 151         | 119         | 85          | 164         | 193         | 211         | 281         | 32                   |
| Delaware.....       | 1,750                             | 1,742       | 1,885       | 1,517       | 1,470       | 1,454       | 771         | 1,346       | 736         | 991                  |
| Maryland.....       | 1,155                             | 1,520       | 2,283       | 2,256       | 2,106       | 1,859       | 975         | 862         | 434         | 493                  |
| Virginia.....       | 5,213                             | 4,750       | 6,501       | 6,618       | 6,480       | 7,090       | 5,361       | 4,973       | 3,262       | 2,920                |
| North Carolina..... | 816                               | 1,510       | 1,683       | 1,711       | 760         | 729         | 883         | 592         | 584         | 415                  |
| South Carolina..... | 120                               | 231         | 162         | 276         | 130         | 375         | 337         | 70          | 195         | 101                  |
| Georgia.....        | 1,018                             | 674         | 678         | 667         | 227         | 527         | 348         | 335         | 148         | 76                   |
| Florida.....        | 175                               | 241         | 185         | 159         | 69          | 125         | 114         | 166         | 70          | 32                   |
| Kentucky.....       | 81                                | 90          | 302         | 185         | 121         | 268         | 222         | 479         | 334         | 104                  |
| Tennessee.....      | 1,137                             | 2,592       | 4,972       | 3,587       | 2,915       | 3,692       | 2,903       | 2,410       | 2,498       | 1,086                |
| Alabama.....        | 649                               | 663         | 515         | 574         | 393         | 570         | 320         | 362         | 158         | 175                  |
| Mississippi.....    | 36                                | 156         | 79          | 211         | 126         | 271         | 219         | 133         | 22          | 69                   |
| Arkansas.....       | 371                               | 476         | 548         | 392         | 316         | 207         | 175         | 128         | 46          | 172                  |
| Louisiana.....      | 558                               | 2,340       | 1,285       | 1,147       | 981         | 1,463       | 1,224       | 1,315       | 963         | 1,017                |
| Oklahoma.....       | 107                               | 216         | 268         | 294         | 255         | 102         | 78          | 16          | 40          | 66                   |
| Texas.....          | 221                               | 485         | 702         | 1,284       | 717         | 802         | 717         | 593         | 238         | 349                  |
| California.....     | 466                               | 1,161       | 1,186       | 805         | 767         | 728         | 869         | 632         | 520         | 481                  |
| Other States.....   | 174                               | 318         | 316         | 187         | 173         | 174         | 234         | 190         | 186         | 73                   |
| Total.....          | 16,067                            | 20,859      | 25,755      | 23,423      | 19,545      | 22,042      | 17,376      | 16,828      | 11,873      | 10,318               |

<sup>1</sup> Crop-movement season covers 12 months, from July of one year through June of the following year. Figures for certain States include shipments for month preceding or following the regular crop-movement season.

<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

TABLE 252.—Sweetpotatoes: Average price per bushel received by producers, United States, 1925-26 to 1934-35

| Year         | July 15      | Aug. 15      | Sept. 15     | Oct. 15      | Nov. 15      | Dec. 15      | Jan. 15      | Feb. 15      | Mar. 15      | Apr. 15      | May 15       | June 15      | Weighted average |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------------------|
|              | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i>     |
| 1925-26..... | 188.7        | 196.3        | 177.4        | 169.4        | 144.4        | 141.5        | 149.3        | 162.4        | 171.4        | 180.4        | 192.2        | 198.8        | 165.4            |
| 1926-27..... | 185.6        | 189.0        | 153.9        | 110.6        | 88.5         | 94.0         | 97.8         | 109.0        | 112.3        | 112.8        | 118.9        | 136.0        | 117.5            |
| 1927-28..... | 136.4        | 146.7        | 121.9        | 98.1         | 86.5         | 91.9         | 98.4         | 98.6         | 106.6        | 115.1        | 121.4        | 124.7        | 109.0            |
| 1928-29..... | 119.5        | 131.0        | 120.9        | 111.2        | 100.2        | 101.8        | 104.2        | 113.7        | 117.0        | 120.8        | 125.9        | 129.8        | 118.4            |
| 1929-30..... | 135.9        | 136.2        | 127.9        | 112.5        | 97.7         | 98.9         | 103.1        | 109.6        | 114.6        | 118.3        | 128.4        | 128.6        | 117.1            |
| 1930-31..... | 125.0        | 136.3        | 126.7        | 110.7        | 93.8         | 94.1         | 98.1         | 100.8        | 105.5        | 113.7        | 115.2        | 108.5        | 108.2            |
| 1931-32..... | 101.1        | 107.8        | 81.4         | 68.1         | 58.2         | 58.5         | 61.4         | 61.8         | 64.4         | 64.0         | 64.6         | 62.5         | 72.5             |
| 1932-33..... | 63.9         | 68.1         | 55.3         | 44.0         | 37.7         | 38.9         | 42.2         | 43.5         | 46.6         | 49.9         | 55.8         | 57.5         | 53.7             |
| 1933-34..... | 67.8         | 93.0         | 76.2         | 63.3         | 56.4         | 60.5         | 67.2         | 72.7         | 78.2         | 81.0         | 82.8         | 86.8         | 69.7             |
| 1934-35..... | 87.0         | 97.5         | 87.9         | 74.8         | 65.0         | 67.9         | -----        | -----        | -----        | -----        | -----        | -----        | 80.7             |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 Yearbook, table 221. Only monthly prices are comparable.

TABLE 253.—*Sweetpotatoes: Average l. c. l. price per bushel to jobbers, New York and Chicago, 1925-26 to 1934-35*

| Market, and season | Aug.   | Sept.  | Oct.   | Nov.              | Dec.              | Jan.              | Feb.              | Mar.              | Apr.              | May    |
|--------------------|--------|--------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------|
| <b>New York:</b>   |        |        |        |                   |                   |                   |                   |                   |                   |        |
| 1925-26.....       | \$1.53 | \$1.70 | \$1.68 | \$1.70            | \$2.23            | \$2.61            | \$2.59            | \$2.96            | \$3.42            | -----  |
| 1926-27.....       | 2.21   | 1.47   | .97    | .98               | 1.24              | 1.37              | 1.46              | 1.61              | 1.81              | \$2.09 |
| 1927-28.....       | 1.81   | 1.13   | .93    | 1.29              | 1.48              | 1.66              | 1.88              | 2.08              | 2.04              | -----  |
| 1928-29.....       | 1.57   | 1.29   | 1.05   | 1.31              | 1.62              | 1.88              | 2.14              | 2.32              | -----             | -----  |
| 1929-30.....       | 1.60   | 1.34   | 1.09   | 1.28              | 1.60              | 1.58              | 1.46              | 1.66              | 2.06              | -----  |
| 1930-31.....       | 1.77   | 1.40   | 1.21   | 1.26              | 1.56              | 1.90              | 2.15              | 2.09              | -----             | -----  |
| 1931-32.....       | 1.21   | .67    | .56    | .56               | .57               | .67               | .68               | .74               | -----             | -----  |
| 1932-33.....       | .81    | .60    | .54    | .54               | .61               | .73               | .82               | .97               | 1.01              | 1.16   |
| 1933-34.....       | 1.43   | .79    | .65    | .70               | .82               | 1.01              | 1.07              | 1.20              | 1.30              | 1.47   |
| 1934-35.....       | 1.65   | 1.01   | .83    | .92               | 1.06              | -----             | -----             | -----             | -----             | -----  |
| <b>Chicago:</b>    |        |        |        |                   |                   |                   |                   |                   |                   |        |
| 1925-26.....       | 2.04   | 2.04   | 2.02   | 2.25              | 2.42              | 2.37              | 2.29              | 2.40              | 2.98              | -----  |
| 1926-27.....       | 2.23   | 1.72   | 1.30   | 1.37              | 1.69              | 1.70              | 1.66              | 1.52              | 1.23              | 1.44   |
| 1927-28.....       | 1.54   | 1.55   | 1.39   | 1.44              | <sup>1</sup> 1.68 | <sup>1</sup> 2.16 | <sup>1</sup> 2.51 | <sup>1</sup> 2.09 | <sup>1</sup> 2.22 | -----  |
| 1928-29.....       | 2.01   | 1.69   | 1.46   | 1.92              | <sup>1</sup> 2.30 | <sup>1</sup> 2.40 | <sup>1</sup> 2.49 | <sup>1</sup> 2.37 | -----             | -----  |
| 1929-30.....       | 1.76   | 1.83   | 1.57   | <sup>1</sup> 1.64 | 1.78              | <sup>1</sup> 1.90 | 2.06              | 2.22              | 2.61              | -----  |
| 1930-31.....       | 2.21   | 1.81   | 1.59   | 1.77              | 1.74              | 1.88              | 2.02              | 2.26              | -----             | -----  |
| 1931-32.....       | 1.12   | 1.08   | .89    | 1.03              | .97               | .88               | 1.02              | .99               | .95               | -----  |
| 1932-33.....       | .94    | 1.13   | .93    | .94               | 1.08              | .98               | .99               | 1.05              | .76               | .50    |
| 1933-34.....       | 1.64   | 1.22   | 1.14   | 1.19              | 1.45              | 1.50              | 1.54              | 1.71              | 1.70              | 1.78   |
| 1934-35.....       | 1.60   | 1.50   | 1.24   | 1.41              | 1.48              | -----             | -----             | -----             | -----             | -----  |

<sup>1</sup> Kiln-dried.

Bureau of Agricultural Economics; compiled from daily market reports from Bureau representatives in the markets.

Average prices as shown are based on stock of good merchantable quality and condition; they are simple averages of daily range of selling prices. In some cases conversions have been made from larger to smaller units or vice versa, in order to obtain comparability.

TABLE 254.—*Spinach, commercial crop: Acreage, production, and season average price per bushel and per ton received by producers; average 1928-32, annual 1933 and 1934*

| Utilization          | Acreage                |                        |                        | Production   |   |   | Price for crop of—     |                        |                        |
|----------------------|------------------------|------------------------|------------------------|--|---|---|------------------------|------------------------|------------------------|
|                      | Average 1928-32        | 1933                   | 1934                   | Average 1928-32  | 1933  | 1934  | Average 1928-32        | 1933                   | 1934                   |
| For market.....      | <i>Acres</i><br>47,760 | <i>Acres</i><br>64,010 | <i>Acres</i><br>54,590 | <i>1,000 bushels</i> <sup>1</sup><br><sup>2</sup> 12,680 | <i>1,000 bushels</i> <sup>1</sup><br>11,546 | <i>1,000 bushels</i> <sup>1</sup><br>10,928 | <i>Dollars</i><br>0.49 | <i>Dollars</i><br>0.37 | <i>Dollars</i><br>0.40 |
| For manufacture..... | 11,110                 | 10,100                 | 15,290                 | <i>Short tons</i><br>52,700                              | <i>Short tons</i><br>36,000                 | <i>Short tons</i><br>41,300                 | 14.97                  | 12.03                  | 11.86                  |

<sup>1</sup> Bushels containing approximately 18 pounds.

<sup>2</sup> Includes some quantities not harvested on account of market conditions: 3,195,000 bushels in 1929; 19,000 in 1931, and 31,000 in 1932. Price refers to harvested portion of crop.

Bureau of Agricultural Economics; estimates based on returns from crop reporters and canning establishments.

TABLE 255.—*Spinach: Car-lot shipments, by State of origin, 1923-34*

| State               | Crop-movement season <sup>1</sup> |             |             |             |             |             |             |             |             |             |             |                   |
|---------------------|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|
|                     | 1923                              | 1924        | 1925        | 1926        | 1927        | 1928        | 1929        | 1930        | 1931        | 1932        | 1933        | 1934 <sup>2</sup> |
|                     | <i>Cars</i>                       | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i>       |
| New York.....       | 24                                | 23          | 12          | 12          | 14          | 24          | 102         | 41          | 46          | 53          | 42          | 51                |
| Missouri.....       | 46                                | 103         | 113         | 100         | 33          | 100         | 27          | 34          | 50          | 50          | 127         | 246               |
| Maryland.....       | 798                               | 725         | 619         | 846         | 670         | 749         | 628         | 172         | 441         | 102         | 56          | 85                |
| Virginia.....       | 3,208                             | 3,107       | 2,946       | 2,669       | 3,213       | 3,066       | 2,974       | 2,586       | 1,332       | 1,127       | 1,963       | 1,174             |
| South Carolina..... | 422                               | 161         | 501         | 614         | 462         | 282         | 110         | 75          | 82          | 5           | 11          | 30                |
| Arkansas.....       | 2                                 | 3           | 24          | 37          | 47          | 191         | 84          | 141         | 127         | 62          | 68          | 95                |
| Texas.....          | 2,433                             | 3,038       | 3,235       | 4,513       | 4,495       | 5,528       | 5,559       | 6,085       | 7,302       | 6,669       | 5,877       | 6,202             |
| California.....     | 473                               | 70          | 241         | 305         | 445         | 334         | 494         | 177         | 71          | 100         | 101         | 22                |
| Washington.....     | 23                                | 40          | 123         | 121         | 145         | 156         | 154         | 207         | 170         | 145         | 161         | 102               |
| Other States.....   | 151                               | 237         | 105         | 166         | 131         | 163         | 216         | 118         | 152         | 81          | 113         | 106               |
| Total.....          | 7,580                             | 7,507       | 7,919       | 9,383       | 9,655       | 10,593      | 10,348      | 9,636       | 9,773       | 8,394       | 8,519       | 8,063             |

<sup>1</sup> Crop-movement season covers 15 months, from October of the preceding year through December of the year shown. Figures for Maryland, Washington, and New Jersey, include shipments in January succeeding the regular crop-movement season.

<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

TABLE 256.—*Strawberries, commercial crop: Acreage, production, and season average price per crate received by producers, by States; average 1928-32, annual 1933 and 1934*

| Group and State                    | Acreage         |              |              | Production <sup>1</sup>          |                                  |                                  | Price for crop of— |                |                |
|------------------------------------|-----------------|--------------|--------------|----------------------------------|----------------------------------|----------------------------------|--------------------|----------------|----------------|
|                                    | Average 1928-32 | 1933         | 1934         | Average 1928-32                  | 1933                             | 1934                             | Average 1928-32    | 1933           | 1934           |
| Early:                             | <i>Acres</i>    | <i>Acres</i> | <i>Acres</i> | <i>1,000 crates <sup>2</sup></i> | <i>1,000 crates <sup>2</sup></i> | <i>1,000 crates <sup>2</sup></i> | <i>Dollars</i>     | <i>Dollars</i> | <i>Dollars</i> |
| Alabama.....                       | 5,240           | 4,460        | 3,150        | 368                              | 334                              | 220                              | 2.74               | 0.95           | 1.40           |
| Florida.....                       | 7,500           | 11,200       | 9,000        | 529                              | 784                              | 675                              | 6.19               | 3.00           | 4.20           |
| Louisiana.....                     | 25,180          | 26,000       | 27,000       | 1,434                            | 1,248                            | 1,242                            | 4.70               | 2.90           | 3.05           |
| Mississippi.....                   | 1,460           | 3,100        | 1,400        | 84                               | 124                              | 77                               | 2.98               | 1.05           | 1.60           |
| Texas.....                         | 2,090           | 2,000        | 2,160        | 112                              | 80                               | 184                              | 4.42               | 2.85           | 3.35           |
| Total.....                         | 41,470          | 46,760       | 42,710       | 3,257                            | 3,257                            | 3,208                            | 4.64               | 2.56           | 3.24           |
| Second early:                      |                 |              |              |                                  |                                  |                                  |                    |                |                |
| Arkansas.....                      | 16,880          | 10,500       | 22,000       | 819                              | 897                              | 1,518                            | 2.61               | 1.45           | 1.30           |
| California, southern district..... | 1,580           | 1,600        | 1,150        | 338                              | 352                              | 205                              | 3.70               | 2.64           | 2.32           |
| Georgia.....                       | 340             | 400          | 450          | 18                               | 24                               | 27                               | 2.59               | 1.00           | 1.90           |
| North Carolina.....                | 6,280           | 6,500        | 6,800        | 622                              | 670                              | 476                              | 2.67               | 1.77           | 2.25           |
| South Carolina.....                | 390             | 550          | 650          | 29                               | 44                               | 39                               | 2.77               | 1.72           | 2.00           |
| Tennessee.....                     | 14,500          | 20,000       | 19,400       | 800                              | 1,240                            | 1,048                            | 2.23               | 1.05           | 1.10           |
| Virginia.....                      | 7,740           | 7,800        | 7,700        | 567                              | 702                              | 732                              | 2.39               | 1.15           | 1.30           |
| Total.....                         | 47,710          | 56,350       | 58,150       | 3,193                            | 3,929                            | 4,045                            | 2.60               | 1.46           | 1.44           |

See footnotes at end of table.



TABLE 256.—*Strawberries, commercial crop: Acreage, production, and season average price per crate received by producers, by States; average 1928-32, annual 1933 and 1934*—Continued

| Group and State        | Acreage            |              |              | Production <sup>1</sup>              |                                      |                                      | Price for crop of— |                |                |
|------------------------|--------------------|--------------|--------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------|----------------|----------------|
|                        | Average<br>1928-32 | 1933         | 1934         | Average<br>1928-32                   | 1933                                 | 1934                                 | Average<br>1928-32 | 1933           | 1934           |
| Intermediate:          | <i>Acres</i>       | <i>Acres</i> | <i>Acres</i> | <i>1,000<br/>crates <sup>2</sup></i> | <i>1,000<br/>crates <sup>2</sup></i> | <i>1,000<br/>crates <sup>2</sup></i> | <i>Dollars</i>     | <i>Dollars</i> | <i>Dollars</i> |
| California, other..... | 2,360              | 3,010        | 3,280        | 450                                  | 572                                  | 784                                  | 3.34               | 2.21           | 2.27           |
| Delaware.....          | 3,900              | 3,900        | 3,700        | 313                                  | <sup>3</sup> 410                     | 352                                  | 2.23               | .85            | 1.50           |
| Illinois.....          | 4,590              | 6,000        | 6,400        | 252                                  | 420                                  | 320                                  | 2.63               | 1.35           | 1.75           |
| Kansas.....            | 920                | 900          | 800          | 45                                   | 45                                   | 16                                   | 2.79               | 1.75           | 2.00           |
| Kentucky.....          | 5,690              | 9,000        | 8,600        | 371                                  | <sup>3</sup> 540                     | 533                                  | 2.99               | 1.20           | 1.65           |
| Maryland.....          | 8,280              | 8,060        | 7,250        | 555                                  | <sup>3</sup> 846                     | 632                                  | 2.26               | .95            | 1.25           |
| Missouri.....          | 18,120             | 14,800       | 16,000       | 795                                  | <sup>3</sup> 740                     | <sup>3</sup> 720                     | 2.95               | 1.60           | 1.75           |
| New Jersey.....        | 4,700              | 6,500        | 6,500        | 405                                  | 630                                  | 540                                  | 2.51               | 1.44           | 1.70           |
| Oklahoma.....          | 1,480              | 1,800        | 1,900        | 49                                   | 50                                   | <sup>3</sup> 76                      | 2.66               | 1.90           | 1.55           |
| Total.....             | 50,040             | 53,970       | 54,430       | 3,235                                | <sup>3</sup> 4,253                   | <sup>3</sup> 3,993                   | 2.69               | 1.41           | 1.73           |
| Late:                  |                    |              |              |                                      |                                      |                                      |                    |                |                |
| Indiana.....           | 1,590              | 2,150        | 2,100        | 117                                  | 183                                  | 74                                   | 2.68               | 1.20           | 1.90           |
| Iowa.....              | 2,720              | 2,900        | 3,000        | 172                                  | 145                                  | 66                                   | 3.49               | 2.10           | 2.40           |
| Michigan.....          | 4,980              | 5,550        | 5,700        | 343                                  | 361                                  | 285                                  | 3.27               | 1.40           | 1.60           |
| New York.....          | 4,550              | 4,810        | 5,050        | 421                                  | 457                                  | 505                                  | 3.44               | 1.90           | 2.40           |
| Ohio.....              | 2,640              | 2,700        | 2,700        | 160                                  | 176                                  | 189                                  | 3.34               | 1.65           | 2.20           |
| Oregon.....            | 10,400             | 6,180        | 8,500        | 741                                  | 297                                  | <sup>3</sup> 595                     | 2.81               | 1.65           | 1.60           |
| Pennsylvania.....      | 2,940              | 3,100        | 3,250        | 268                                  | 239                                  | 260                                  | 2.95               | 1.50           | 2.20           |
| Utah.....              | 1,430              | 1,500        | 1,420        | 98                                   | 93                                   | 43                                   | 2.54               | 1.70           | 1.70           |
| Washington.....        | 8,230              | 7,200        | 7,500        | 567                                  | 360                                  | <sup>3</sup> 638                     | 2.92               | 1.70           | 1.35           |
| Wisconsin.....         | 2,890              | 3,000        | 3,150        | 193                                  | 195                                  | 173                                  | 3.53               | 1.90           | 2.00           |
| Total.....             | 42,370             | 39,090       | 42,370       | 3,080                                | 2,506                                | <sup>3</sup> 2,828                   | 3.07               | 1.67           | 1.86           |
| Grand total.....       | 181,590            | 196,170      | 197,660      | <sup>3</sup> 12,035                  | <sup>3</sup> 13,258                  | <sup>3</sup> 13,264                  | 3.14               | 1.70           | 1.94           |

<sup>1</sup>Includes undetermined quantities used for canning, cold pack, etc.<sup>2</sup>24-quart crates containing approximately 36 pounds.

<sup>3</sup>Including some quantities not harvested on account of market conditions: Early—Alabama, 25,000 crates in 1934; Louisiana, 70,000 crates in 1923, 163,000 in 1929, 412,000 in 1932, 208,000 in 1933, and 135,000 in 1934; Mississippi, 15,000 crates in 1934; second early—Arkansas, 97,000 crates in 1933 and 198,000 in 1934; Tennessee, 200,000 crates in 1933, and 136,000 in 1934; Virginia, 117,000 crates in 1933 and 62,000 in 1934; intermediate—Delaware, 82,000 crates in 1933; Kentucky, 90,000 crates in 1933 and 60,000 in 1934; Maryland, 121,000 crates in 1933; Missouri, 80,000 crates in 1932, 118,000 in 1933, and 112,000 in 1934; Oklahoma, 13,000 crates in 1934; late—Oregon, 85,000 crates in 1934; Washington, 113,000 crates in 1934. Price refers to harvested portion of crop.

Bureau of Agricultural Economics; estimates based on returns from crop reporters.

TABLE 257.—*Strawberries: Car-lot shipments, by State of origin, 1929-34*

| Group and State                     | Calendar year <sup>1</sup> |               |               |               |               |                   |
|-------------------------------------|----------------------------|---------------|---------------|---------------|---------------|-------------------|
|                                     | 1929                       | 1930          | 1931          | 1932          | 1933          | 1934 <sup>2</sup> |
| <b>Early:</b>                       | <i>Cars</i>                | <i>Cars</i>   | <i>Cars</i>   | <i>Cars</i>   | <i>Cars</i>   | <i>Cars</i>       |
| Alabama.....                        | 1,354                      | 771           | 1,154         | 755           | 893           | 450               |
| Florida.....                        | 1,633                      | 1,721         | 1,862         | 1,760         | 2,084         | 1,830             |
| Louisiana.....                      | 2,859                      | 2,389         | 4,720         | 2,664         | 2,610         | 2,778             |
| Mississippi.....                    | 115                        | 74            | 127           | 131           | 114           | 73                |
| Texas.....                          | 253                        | 92            | 65            | 38            | 39            | 106               |
| Other States.....                   | 1                          | 6             | 3             | -----         | -----         | 3                 |
| Total.....                          | 6,215                      | 5,053         | 7,931         | 5,348         | 5,740         | 5,240             |
| <b>Second early:</b>                |                            |               |               |               |               |                   |
| Arkansas.....                       | 2,488                      | 688           | 578           | 1,721         | 1,092         | 2,144             |
| California (southern district)..... | 10                         | 16            | 13            | 75            | 62            | 18                |
| Georgia.....                        | 17                         | 9             | 14            | 11            | 13            | 11                |
| North Carolina.....                 | 1,483                      | 766           | 1,228         | 619           | 849           | 306               |
| South Carolina.....                 | 30                         | 9             | 44            | 58            | 74            | 35                |
| Tennessee.....                      | 2,151                      | 1,158         | 1,066         | 1,282         | 1,632         | 1,217             |
| Virginia.....                       | 849                        | 385           | 525           | 393           | 475           | 198               |
| Total.....                          | 7,028                      | 2,971         | 3,463         | 4,159         | 4,197         | 3,929             |
| <b>Intermediate:</b>                |                            |               |               |               |               |                   |
| California (other).....             | 162                        | 203           | 174           | 366           | 385           | 405               |
| Delaware.....                       | 418                        | 203           | 111           | 94            | 158           | 241               |
| Illinois.....                       | 273                        | 163           | 119           | 175           | 211           | 138               |
| Indiana.....                        | 105                        | 33            | 64            | 150           | 188           | 38                |
| Iowa.....                           | 52                         | 48            | 36            | 44            | 22            | -----             |
| Kansas.....                         | 63                         | 29            | 23            | 13            | 15            | 1                 |
| Kentucky.....                       | 851                        | 404           | 395           | 1,070         | 988           | 979               |
| Maryland.....                       | 734                        | 424           | 352           | 328           | 358           | 241               |
| Missouri.....                       | 2,062                      | 807           | 692           | 795           | 765           | 611               |
| New Jersey.....                     | 176                        | 106           | 60            | 67            | 41            | 39                |
| Oklahoma.....                       | 111                        | 39            | 3             | 12            | 14            | 54                |
| Total.....                          | 5,007                      | 2,459         | 2,029         | 3,112         | 3,145         | 2,747             |
| <b>Late:</b>                        |                            |               |               |               |               |                   |
| Massachusetts.....                  | 47                         | 44            | 21            | 21            | 11            | 15                |
| Michigan.....                       | 79                         | 57            | 53            | 71            | 102           | 18                |
| New York.....                       | 55                         | 31            | 58            | 85            | 24            | 25                |
| Oregon.....                         | 103                        | 35            | 40            | 112           | 2             | 11                |
| Washington.....                     | 61                         | 12            | 23            | 32            | 2             | 23                |
| Wisconsin.....                      | 26                         | 7             | 8             | 59            | 18            | 32                |
| Other States.....                   | 5                          | -----         | 9             | 7             | 10            | 14                |
| Total.....                          | 376                        | 186           | 212           | 387           | 169           | 138               |
| <b>Grand total.....</b>             | <b>18,623</b>              | <b>10,669</b> | <b>13,640</b> | <b>13,006</b> | <b>13,251</b> | <b>12,054</b>     |

<sup>1</sup> Crop movement is for calendar year, except Florida and Texas starting with 1933 season, which begin in December of the preceding year.

<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

TABLE 258.—*Tomatoes: Commercial acreage, season average price received by producers, and production; imports and exports, United States, 1924-34*

| Year                    | Commercial acreage |                 | Season average price received by producers |                                       | Commercial production |                     | Imports, year beginning July |                     |                     | Exports, year beginning July |                     |
|-------------------------|--------------------|-----------------|--|---------------------------------------|-----------------------|---------------------|------------------------------|---------------------|---------------------|------------------------------|---------------------|
|                         | For market         | For manufacture | For market, per bushel <sup>1</sup>        | For manufacture, per ton <sup>2</sup> | For market            | For manufacture     | Fresh                        | Canned <sup>3</sup> | Paste               | Canned                       | Catsup and sauces   |
|                         | <i>Acres</i>       | <i>Acres</i>    | <i>Dollars</i>                             | <i>Dollars</i>                        | <i>1,000 pounds</i>   | <i>1,000 pounds</i> | <i>1,000 pounds</i>          | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i>          | <i>1,000 pounds</i> |
| 1924.....               | 150,520            | 291,270         | 2.10                                       | 15.71                                 | 987,390               | 2,380,400           | 69,216                       | 83,345              | 17,582              | 5,203                        | 5,520               |
| 1925.....               | 134,020            | 355,130         | 1.96                                       | 14.79                                 | 1,037,104             | 618,400             | 82,448                       | 84,897              | 18,179              | 5,794                        | 5,008               |
| 1926.....               | 111,080            | 263,300         | 2.14                                       | 14.71                                 | 721,542               | 987,200             | 124,488                      | 80,257              | 15,642              | 7,504                        | 7,556               |
| 1927.....               | 138,900            | 297,970         | 1.62                                       | 14.31                                 | 924,002               | 391,800             | 134,488                      | 109,782             | 12,064              | 6,725                        | 8,584               |
| 1928.....               | 139,470            | 270,850         | 1.81                                       | 14.19                                 | 827,807               | 1,994,400           | 128,927                      | 114,042             | 9,539               | 4,009                        | 13,068              |
| 1929.....               | 142,620            | 323,720         | 1.82                                       | 15.25                                 | 896,707               | 1,069,400           | 139,886                      | 147,429             | 16,547              | 4,872                        | 10,410              |
| 1930.....               | 154,640            | 407,950         | 1.61                                       | 15.05                                 | 900,046               | 515,000             | 113,480                      | 75,173              | 11,605              | 2,916                        | 5,219               |
| 1931.....               | 158,970            | 296,120         | 1.10                                       | 11.80                                 | 897,343               | 1,952,800           | 122,215                      | 91,572              | 12,154              | 4,621                        | 3,321               |
| 1932.....               | 157,610            | 280,510         | 1.03                                       | 10.08                                 | 954,159               | 2,398,600           | 59,028                       | 72,226              | 11,405              | 4,038                        | 2,561               |
| 1933.....               | 154,430            | 280,150         | 1.14                                       | 11.39                                 | 855,042               | 2,162,600           | 46,150                       | 75,963              | 11,363              | 1,885                        | 2,698               |
| 1934 <sup>4</sup> ..... | 161,910            | 352,130         | 1.30                                       | 12.18                                 | 958,240               | 2,779,200           |                              |                     |                     |                              |                     |

<sup>1</sup> Bushels containing approximately 53 pounds.<sup>2</sup> Short tons.<sup>3</sup> Includes "otherwise prepared."<sup>4</sup> Preliminary.

Bureau of Agricultural Economics; production figures based on returns from crop reporters and canning establishments; imports and exports compiled from Monthly Summary of Foreign Commerce of the United States, June issues. Beginning 1933-34 imports are imports for consumption. See introductory text.

TABLE 259.—*Tomatoes, commercial crop: Acreage, production, and season average price per bushel and per ton received by producers; average 1928-32, annual 1933 and 1934*

| Utilization, marketing season, and State | Acreage         |                |                | Production                        |                                   |                                   | Price for crop of— |                |                |
|--|-----------------|----------------|----------------|-----------------------------------|-----------------------------------|-----------------------------------|--------------------|----------------|----------------|
|  | Average 1928-32 | 1933           | 1934           | Average 1928-32                   | 1933                              | 1934                              | Average 1928-32    | 1933           | 1934           |
|  | <i>Acres</i>    | <i>Acres</i>   | <i>Acres</i>   | <i>1,000 bushels</i> <sup>1</sup> | <i>1,000 bushels</i> <sup>1</sup> | <i>1,000 bushels</i> <sup>1</sup> | <i>Dollars</i>     | <i>Dollars</i> | <i>Dollars</i> |
| <b>For market:</b>                       |                 |                |                |                                   |                                   |                                   |                    |                |                |
| Fall.....                                | 4,010           | 6,100          | 4,300          | 256                               | 280                               | 334                               | 2.56               | 2.17           | 2.19           |
| Early (sec. 1).....                      | 10,990          | 12,900         | 12,000         | 1,218                             | 1,703                             | 2,040                             | 2.89               | 1.80           | 2.60           |
| Early (sec. 2).....                      | 26,000          | 25,400         | 23,400         | 2,036                             | 1,705                             | 1,566                             | 2.52               | 1.56           | 2.39           |
| Second early.....                        | 34,220          | 34,000         | 40,700         | <sup>2</sup> 3,498                | 2,666                             | <sup>2</sup> 4,120                | 1.47               | 1.52           | .81            |
| Intermediate.....                        | 35,960          | 37,210         | 41,210         | <sup>2</sup> 4,817                | <sup>2</sup> 4,494                | 4,903                             | 1.05               | .85            | .93            |
| Late (sec. 1).....                       | 29,320          | 31,970         | 33,600         | <sup>2</sup> 4,206                | 4,582                             | 4,286                             | .98                | .69            | .84            |
| Late (sec. 2).....                       | 9,560           | 6,850          | 6,700          | 860                               | 733                               | 831                               | 1.58               | 1.42           | 2.07           |
| <b>Total.....</b>                        | <b>150,660</b>  | <b>154,430</b> | <b>161,910</b> | <b><sup>2</sup> 16,891</b>        | <b><sup>2</sup> 16,133</b>        | <b><sup>2</sup> 18,080</b>        | <b>1.47</b>        | <b>1.14</b>    | <b>1.30</b>    |
| <b>For manufacture:</b>                  |                 |                |                | <i>Short tons</i>                 | <i>Short tons</i>                 | <i>Short tons</i>                 |                    |                |                |
| New York.....                            | 12,620          | 12,300         | 15,900         | 83,200                            | 76,300                            | 119,200                           | 13.90              | 11.00          | 11.70          |
| New Jersey.....                          | 33,800          | 27,000         | 30,700         | 181,900                           | 89,100                            | 122,800                           | 17.90              | 13.50          | 14.00          |
| Pennsylvania.....                        | 4,740           | 6,000          | 7,800          | 18,000                            | 26,200                            | 34,300                            | 14.40              | 11.60          | 14.30          |
| Ohio.....                                | 10,670          | 9,800          | 11,900         | 60,400                            | 72,500                            | 78,500                            | 10.60              | 9.30           | 9.30           |
| Indiana.....                             | 62,940          | 53,000         | 83,000         | 247,200                           | 212,000                           | 315,400                           | 11.50              | 9.60           | 9.80           |
| Illinois.....                            | 5,420           | 5,000          | 10,100         | 19,700                            | 15,000                            | 11,100                            | 12.20              | 10.90          | 12.20          |
| Michigan.....                            | 2,030           | 2,500          | 3,150          | 11,500                            | 18,500                            | 17,300                            | 10.40              | 7.90           | 8.50           |
| Iowa.....                                | 5,500           | 4,600          | 4,300          | 21,600                            | 22,500                            | 7,700                             | 12.00              | 9.20           | 9.60           |
| Missouri.....                            | 20,310          | 12,000         | 2,400          | 43,400                            | 40,800                            | 1,400                             | 11.80              | 9.30           | 10.00          |
| Delaware.....                            | 12,680          | 13,300         | 18,500         | 43,600                            | 26,600                            | 51,800                            | 14.60              | 17.40          | 17.40          |
| Maryland.....                            | 39,780          | 46,200         | 55,800         | 139,300                           | 134,000                           | 184,100                           | 14.20              | 15.30          | 15.90          |
| Virginia.....                            | 16,180          | 16,500         | 18,900         | 44,800                            | 46,200                            | 43,500                            | 12.60              | 12.10          | 13.50          |
| Kentucky.....                            | 6,110           | 4,000          | 5,400          | 16,300                            | 8,000                             | 8,600                             | 11.10              | 9.50           | 10.00          |
| Tennessee.....                           | 10,500          | 6,600          | 9,000          | 22,600                            | 17,200                            | 16,200                            | 11.20              | 10.00          | 10.30          |
| Arkansas.....                            | 21,000          | 15,000         | 2,600          | 47,800                            | 34,500                            | 1,600                             | 11.80              | 10.00          | 10.00          |
| Colorado.....                            | 2,130           | 1,400          | 2,800          | 15,300                            | 9,500                             | 11,000                            | 10.30              | 8.70           | 9.20           |
| Utah.....                                | 5,850           | 3,600          | 5,000          | 50,900                            | 31,000                            | 23,000                            | 10.30              | 9.20           | 9.60           |
| California.....                          | 35,340          | 30,470         | 49,400         | 188,100                           | 164,500                           | 291,500                           | 13.70              | 12.00          | 12.00          |
| Other States <sup>3</sup> .....          | 8,230           | 10,980         | 15,780         | 27,400                            | 37,900                            | 50,600                            | 12.13              | 9.76           | 12.51          |
| <b>Total.....</b>                        | <b>315,830</b>  | <b>280,150</b> | <b>352,130</b> | <b>1,293,000</b>                  | <b>1,081,300</b>                  | <b>1,389,600</b>                  | <b>13.27</b>       | <b>11.39</b>   | <b>12.18</b>   |

<sup>1</sup> Bushels containing approximately 53 pounds.

<sup>2</sup> Includes some quantities not harvested on account of market conditions: 41,000 bushels in 1928; 75,000 in 1930; 168,000 in 1931; 126,000 in 1932; 134,000 in 1933; and 1,082,000 in 1934. Price refers to harvested portion of crop.

<sup>3</sup> Other States includes Connecticut, Florida, Georgia, Idaho, Kansas, Louisiana, Mississippi, Nebraska, New Mexico, North Carolina, Oklahoma, Oregon, South Carolina, Texas, Washington, West Virginia, and Wisconsin.

Bureau of Agricultural Economics; estimates based on returns from crop reporters and canning establishments.

TABLE 260.—*Tomatoes: Car-lot shipments, by State of origin, 1924-34*

| State               | Calendar year <sup>1</sup> |             |             |             |             |             |             |             |             |             |                   |
|---------------------|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|
|                     | 1924                       | 1925        | 1926        | 1927        | 1928        | 1929        | 1930        | 1931        | 1932        | 1933        | 1934 <sup>2</sup> |
|                     | <i>Cars</i>                | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i>       |
| New York.....       | 954                        | 1,024       | 656         | 951         | 1,112       | 838         | 514         | 774         | 463         | 408         | 562               |
| New Jersey.....     | 2,150                      | 1,907       | 2,006       | 1,329       | 678         | 694         | 842         | 52          | 17          | 11          | 5                 |
| Ohio.....           | 1,035                      | 1,286       | 1,065       | 1,125       | 926         | 1,020       | 1,007       | 1,360       | 960         | 679         | 625               |
| Indiana.....        | 1,479                      | 1,889       | 1,514       | 1,132       | 799         | 1,631       | 2,217       | 683         | 279         | 148         | 28                |
| Illinois.....       | 280                        | 539         | 422         | 270         | 240         | 237         | 316         | 339         | 139         | 53          | 60                |
| Maryland.....       | 66                         | 313         | 259         | 586         | 613         | 775         | 554         | 373         | 313         | 267         | 267               |
| Virginia.....       | 167                        | 379         | 454         | 300         | 277         | 438         | 243         | 166         | 147         | 61          | 83                |
| North Carolina..... | 8                          |             | 12          | 21          | 3           | 2           | 118         | 158         | 162         | 83          | 66                |
| South Carolina..... | 421                        | 568         | 449         | 187         | 161         | 348         | 461         | 348         | 235         | 162         | 153               |
| Florida.....        | 9,140                      | 7,188       | 4,351       | 9,737       | 8,491       | 8,038       | 6,495       | 5,435       | 6,284       | 6,201       | 7,705             |
| Arkansas.....       | 38                         | 104         | 281         | 240         | 389         | 300         | 318         | 217         | 228         | 62          | 92                |
| Louisiana.....      | 9                          | 10          | 28          | 8           |             | 6           | 10          | 13          | 57          | 235         | 322               |
| Tennessee.....      | 935                        | 1,393       | 2,374       | 2,015       | 2,759       | 2,317       | 2,496       | 2,038       | 2,026       | 1,429       | 1,702             |
| Mississippi.....    | 3,776                      | 3,149       | 3,492       | 4,849       | 3,230       | 4,099       | 3,451       | 2,683       | 2,869       | 2,408       | 3,012             |
| Texas.....          | 1,694                      | 2,398       | 2,890       | 3,393       | 4,435       | 5,338       | 7,546       | 8,774       | 4,108       | 6,346       | 6,066             |
| Colorado.....       | 77                         | 195         | 27          | 20          | 59          | 55          | 138         | 195         | 67          | 30          | 53                |
| Utah.....           | 380                        | 1,457       | 272         | 833         | 899         | 740         | 342         | 323         | 198         | 282         | 335               |
| Washington.....     | 33                         | 86          | 35          | 95          | 143         | 215         | 336         | 252         | 78          | 100         | 142               |
| California.....     | 2,759                      | 2,961       | 4,440       | 4,620       | 4,475       | 4,241       | 5,458       | 3,403       | 4,307       | 3,727       | 3,647             |
| Other States.....   | 1,399                      | 1,408       | 1,041       | 842         | 706         | 820         | 716         | 260         | 270         | 267         | 211               |
| Total.....          | 26,830                     | 28,254      | 26,068      | 32,664      | 30,395      | 32,202      | 33,578      | 27,846      | 23,207      | 22,899      | 25,136            |

<sup>1</sup> Figures for Florida, Texas, and California include shipments for months preceding or following the regular crop-movement season.

<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

TABLE 261.—*Tomatoes, canned: Pack <sup>1</sup> in the United States, 1923-31 and 1933-34 <sup>2</sup>*

|                             | Season         |                |                |                |                |                |                |                |                |                  |                  |                    |
|-----------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|------------------|--------------------|
| State                       | 1923           | 1924           | 1925           | 1926           | 1927           | 1928           | 1929           | 1930           | 1931           | 1933             | 1934             |                    |
|                             | 1,000<br>cases | 1,000<br>cases | 1,000<br>cases | 1,000<br>cases | 1,000<br>cases | 1,000<br>cases | 1,000<br>cases | 1,000<br>cases | 1,000<br>cases | 1,000<br>cases   | 1,000<br>cases   |                    |
| New York.....               | 266            | 325            | 389            | 302            | 300            | 261            | 329            | 467            | 497            | 485              | 738              |                    |
| New Jersey.....             | 412            | 186            | 418            | 204            | 254            | 95             | 257            | 356            | 144            | 111              | 128              |                    |
| Pennsylvania.....           | 258            | 150            | 338            | 113            | 167            | 95             | 122            | 151            | 160            | 183              | 234              |                    |
| Ohio.....                   | 174            | 133            | 179            | 120            | 189            | 124            | 153            | 429            | 304            | 427              | 522              |                    |
| Indiana.....                | 717            | 1,050          | 1,955          | 900            | 1,131          | 613            | 1,134          | 2,029          | 1,192          | 1,685            | 2,043            |                    |
| Missouri.....               | 839            | 871            | 1,836          | 895            | 606            | 396            | 622            | 1,078          | 519            | ( <sup>3</sup> ) | ( <sup>3</sup> ) |                    |
| Delaware.....               | 1,216          | 803            | 1,272          | 223            | 827            | 325            | 851            | 755            | 340            | 266              | 401              |                    |
| Maryland.....               | 5,722          | 3,825          | 6,175          | 1,901          | 3,671          | 1,720          | 4,050          | 3,770          | 1,710          | 2,636            | 3,611            |                    |
| Virginia <sup>4</sup> ..... | 963            | 1,116          | 1,138          | 572            | 1,059          | 466            | 918            | 818            | 508            | 977              | 1,005            |                    |
| Kentucky.....               | 59             | 136            | 275            | 223            | 253            | 111            | 167            | 161            | 161            | 183              | 445              |                    |
| Tennessee.....              | 176            | 386            | 332            | 280            | 368            | 160            | 297            | 518            | 314            | } 488            | } 445            |                    |
| Arkansas.....               | 270            | 768            | 1,168          | 558            | 678            | 613            | 769            | 1,050          | 761            |                  |                  | <sup>5</sup> 1,546 |
| Colorado <sup>6</sup> ..... | 182            | 180            | 309            | 183            | 127            | 158            | 195            | 293            | 227            | 128              | ( <sup>7</sup> ) |                    |
| Utah.....                   | 584            | 417            | 1,353          | 235            | 792            | 924            | 768            | 788            | 1,028          | 556              | 420              |                    |
| California.....             | 2,397          | 1,767          | 1,839          | 2,347          | 2,257          | 1,991          | 2,812          | 3,460          | 864            | 1,573            | 2,577            |                    |
| Other States.....           | 437            | 406            | 744            | 389            | 459            | 487            | 701            | 875            | 844            | 925              | 853              |                    |
| United States.....          | 14,672         | 12,519         | 19,770         | 9,455          | 13,137         | 8,539          | 14,145         | 16,998         | 9,573          | 11,986           | 13,109           |                    |

<sup>1</sup> Stated in cases of 24 No. 3 cans.

<sup>2</sup> No comparable figures for 1932.

<sup>3</sup> Included in Arkansas.

<sup>4</sup> Includes West Virginia.

<sup>5</sup> Includes Missouri.

<sup>6</sup> Includes Washington.

<sup>7</sup> Included in "Other States."

Bureau of Agricultural Economics; compiled from National Cannery Association, 1923-26 and 1934; Bureau of Census, 1927-29; Foodstuffs Division, Bureau of Foreign and Domestic Commerce, 1930-33.

TABLE 262.—*Walnuts: Production and average price per ton received by producers, California and Oregon, 1924-34*

| Year                    | California        |                |                                 | Oregon            |                |                                 |
|-------------------------|-------------------|----------------|---------------------------------|-------------------|----------------|---------------------------------|
|                         | Production        | Price          | Farm value, basis average price | Production        | Price          | Farm value, basis average price |
|                         | <i>Short tons</i> | <i>Dollars</i> | <i>1,000 dollars</i>            | <i>Short tons</i> | <i>Dollars</i> | <i>1,000 dollars</i>            |
| 1924.....               | 22,500            | 460            | 10,350                          | 400               | 480            | 192                             |
| 1925.....               | 36,000            | 440            | 15,840                          | 500               | 480            | 240                             |
| 1926.....               | 15,000            | 480            | 7,200                           | 900               | 500            | 450                             |
| 1927.....               | 51,000            | 330            | 16,830                          | 800               | 360            | 288                             |
| 1928.....               | 25,000            | 420            | 10,500                          | 1,500             | 440            | 660                             |
| 1929.....               | 39,000            | 320            | 12,480                          | 1,250             | 360            | 450                             |
| 1930.....               | 30,000            | 410            | 12,300                          | 700               | 400            | 280                             |
| 1931.....               | 29,000            | 233            | 6,757                           | 2,000             | 275            | 550                             |
| 1932.....               | 45,500            | 174            | 7,917                           | 3,000             | 240            | 720                             |
| 1933.....               | 32,000            | 222            | 7,104                           | 1,000             | 280            | 280                             |
| 1934 <sup>1</sup> ..... | 39,000            | 220            | 8,580                           | 3,200             | 300            | 960                             |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board. California data for earlier years in 1928 Yearbook, table 165.

TABLE 263.—*Watermelons, commercial crop: Acreage, production, and season average price per 1,000 melons received by producers; average 1928-32, annual 1933 and 1934*

| Marketing season  | Acreage         |              |              | Production          |                     |                     | Price for crop of— |                |                |
|-------------------|-----------------|--------------|--------------|---------------------|---------------------|---------------------|--------------------|----------------|----------------|
|                   | Average 1928-32 | 1933         | 1934         | Average 1928-32     | 1933                | 1934                | Average 1928-32    | 1933           | 1934           |
|                   | <i>Acres</i>    | <i>Acres</i> | <i>Acres</i> | <i>1,000 melons</i> | <i>1,000 melons</i> | <i>1,000 melons</i> | <i>Dollars</i>     | <i>Dollars</i> | <i>Dollars</i> |
| Early.....        | 42,870          | 30,000       | 31,500       | 115,601             | 8,835               | 9,625               | 189                | 163            | 140            |
| Second early..... | 139,220         | 107,150      | 114,400      | 138,543             | 124,057             | 121,906             | 107                | 77             | 99             |
| Late.....         | 43,980          | 49,200       | 50,740       | 116,103             | 117,207             | 117,430             | 121                | 85             | 101            |
| Total.....        | 226,070         | 186,350      | 196,640      | 170,247             | 150,099             | 148,961             | 128                | 95             | 108            |

<sup>1</sup> Includes some quantities not harvested on account of market conditions, 5,677,000 melons in 1930; 1,761,000 in 1931; 8,663,000 in 1932; 1,354,000 in 1933, and 122,000 melons in 1934. Price refers to harvested portion of crop.

Bureau of Agricultural Economics; estimates based on returns from crop reporters.

TABLE 264.—*Watermelons: Car-lot shipments, United States, 1925-34*

| Season                  | Apr.        | May         | June        | July        | Aug.        | Sept.       | Oct.        | Nov.        | Total       |
|-------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                         | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> |
| 1925.....               |             | 605         | 11,767      | 17,814      | 11,524      | 2,390       | 82          | 2           | 44,184      |
| 1926.....               |             | 443         | 11,424      | 29,923      | 11,509      | 1,861       | 28          |             | 55,188      |
| 1927.....               | 4           | 1,713       | 15,255      | 20,898      | 6,262       | 1,261       | 67          |             | 45,460      |
| 1928.....               |             | 508         | 10,410      | 24,937      | 11,408      | 1,183       | 50          | 1           | 48,497      |
| 1929.....               | 36          | 3,498       | 22,047      | 18,287      | 7,582       | 1,007       | 57          |             | 52,514      |
| 1930.....               |             | 386         | 17,830      | 29,028      | 10,306      | 1,359       | 102         |             | 59,011      |
| 1931.....               |             | 121         | 16,282      | 23,733      | 10,344      | 1,593       | 58          |             | 52,131      |
| 1932.....               | 2           | 696         | 11,534      | 13,966      | 5,274       | 655         | 21          |             | 32,148      |
| 1933.....               | 3           | 1,637       | 7,967       | 13,824      | 5,382       | 919         | 20          |             | 29,752      |
| 1934 <sup>1</sup> ..... |             | 1,181       | 10,635      | 11,678      | 4,683       | 330         | 6           |             | 28,513      |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

TABLE 265.—*Watermelons: Car-lot shipments, by State of origin, 1925-34*<sup>1</sup>

| State               | 1925        | 1926        | 1927        | 1928        | 1929        | 1930        | 1931        | 1932        | 1933        | 1934 <sup>2</sup> |
|---------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|
|                     | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i>       |
| Indiana.....        | 640         | 389         | 45          | 322         | 299         | 102         | 305         | 32          | 16          | 110               |
| Iowa.....           | 289         | 135         | 107         | 123         | 83          | 100         | 109         | 60          | 82          | 42                |
| Missouri.....       | 3,293       | 2,843       | 533         | 851         | 1,039       | 1,405       | 2,641       | 1,770       | 2,351       | 2,629             |
| Maryland.....       | 531         | 402         | 161         | 208         | 210         | 311         | 620         | 462         | 370         | 333               |
| Virginia.....       | 375         | 375         | 294         | 438         | 487         | 510         | 935         | 961         | 1,047       | 926               |
| North Carolina..... | 991         | 1,301       | 1,144       | 1,252       | 758         | 1,769       | 2,486       | 1,628       | 1,705       | 1,237             |
| South Carolina..... | 4,232       | 5,395       | 4,031       | 3,822       | 3,494       | 5,018       | 4,206       | 3,617       | 4,897       | 2,349             |
| Georgia.....        | 14,754      | 19,379      | 16,762      | 17,558      | 21,882      | 25,998      | 18,545      | 9,001       | 9,291       | 8,948             |
| Florida.....        | 7,190       | 8,384       | 8,485       | 9,195       | 10,479      | 8,682       | 9,561       | 5,364       | 4,241       | 3,862             |
| Alabama.....        | 1,880       | 1,943       | 1,379       | 769         | 722         | 1,056       | 978         | 874         | 542         | 971               |
| Mississippi.....    | 219         | 208         | 182         | 197         | 251         | 206         | 139         | 35          | 34          | 286               |
| Arkansas.....       | 411         | 471         | 321         | 347         | 439         | 270         | 312         | 173         | 135         | 193               |
| Oklahoma.....       | 141         | 249         | 429         | 513         | 538         | 511         | 244         | 73          | 42          | 6                 |
| Texas.....          | 3,157       | 6,314       | 5,619       | 6,450       | 4,460       | 6,050       | 4,107       | 3,159       | 2,272       | 2,208             |
| Washington.....     | 259         | 191         | 200         | 261         | 307         | 239         | 192         | 140         | 66          | 152               |
| California.....     | 4,522       | 6,278       | 5,221       | 5,589       | 6,366       | 6,282       | 6,241       | 4,843       | 2,822       | 3,960             |
| Other States.....   | 1,294       | 931         | 547         | 552         | 700         | 502         | 510         | 456         | 339         | 301               |
| Total.....          | 44,184      | 55,188      | 45,460      | 48,497      | 52,514      | 59,011      | 52,131      | 32,148      | 29,752      | 28,513            |

<sup>1</sup> Crop-movement season extends from Apr. 1 through November of a given year.<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

TABLE 266.—*Frozen and preserved fruits: Cold-storage holdings, United States, 1925-26 to 1934-35*

| Year         | June 1           | July 1           | Aug. 1           | Sept. 1          | Oct. 1           | Nov. 1           | Dec. 1           | Jan. 1           | Feb. 1           | Mar. 1           | Apr. 1           | May 1            |
|--------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|              | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> |
| 1925-26..... | 19,168           | 24,259           | 28,702           | 28,356           | 25,564           | 24,640           | 22,624           | 24,054           | 21,592           | 19,124           | 16,368           | 13,370           |
| 1926-27..... | 23,347           | 39,421           | 50,941           | 59,825           | 57,990           | 56,088           | 54,189           | 50,773           | 48,921           | 45,716           | 43,455           | 39,147           |
| 1927-28..... | 41,075           | 57,670           | 62,974           | 65,352           | 62,412           | 61,840           | 56,971           | 54,661           | 52,196           | 43,945           | 40,137           | 36,659           |
| 1928-29..... | 38,372           | 60,916           | 83,228           | 79,211           | 79,457           | 77,274           | 73,195           | 68,725           | 60,216           | 53,310           | 48,570           | 41,392           |
| 1929-30..... | 42,285           | 56,539           | 64,863           | 64,993           | 61,343           | 61,752           | 57,860           | 54,942           | 48,085           | 41,723           | 38,554           | 32,535           |
| 1930-31..... | 35,854           | 44,795           | 73,360           | 81,734           | 81,178           | 80,049           | 76,737           | 74,845           | 70,646           | 66,656           | 60,822           | 56,740           |
| 1931-32..... | 66,358           | 88,979           | 110,223          | 107,271          | 103,427          | 99,234           | 96,074           | 92,305           | 88,819           | 82,283           | 78,162           | 72,194           |
| 1932-33..... | 69,068           | 90,323           | 92,717           | 91,908           | 87,302           | 83,579           | 79,651           | 74,595           | 70,184           | 63,613           | 58,983           | 51,861           |
| 1933-34..... | 51,922           | 60,029           | 69,275           | 67,631           | 64,877           | 65,088           | 61,713           | 59,926           | 55,434           | 49,164           | 46,180           | 39,993           |
| 1934-35..... | 53,512           | 63,614           | 76,056           | 71,536           | 71,134           | 70,316           | 67,712           | -----            | -----            | -----            | -----            | -----            |

Bureau of Agricultural Economics. Compiled from reports made by cold-storage establishments.

TABLE 267.—Fruits and vegetables: Unloads of 18 commodities at 66 markets, in car lots, 1934, and total 1920-34

| Market        | Apples | Cabbage | Cantaloupes <sup>1</sup> | Celery | Grapefruit | Grapes | Lemons | Lettuce <sup>2</sup> | Onions | Oranges <sup>3</sup> | Peaches | Pears | Plums <sup>4</sup> | Potatoes | Strawberries | Sweet potatoes | Tomatoes | Watermelons |
|---------------|--------|---------|--------------------------|--------|------------|--------|--------|----------------------|--------|----------------------|---------|-------|--------------------|----------|--------------|----------------|----------|-------------|
| Albion        | 43     | 60      | 32                       | 9      | 10         | 48     | 4      | 289                  | 31     | 54                   | 44      | 25    | 21                 | 661      | 32           | 48             | 10       | 162         |
| Albany        | 55     | 105     | 173                      | 84     | 18         | 156    | 79     | 289                  | 123    | 380                  | 166     | 16    | 21                 | 918      | 97           | 78             | 48       | 135         |
| Albany        | 407    | 24      | 23                       | 142    | 28         | 205    | 205    | 274                  | 290    | 220                  | 1       | 83    | 66                 | 884      | 1            | 7              | 7        | 121         |
| Baltimore     | 273    | 855     | 327                      | 759    | 345        | 374    | 803    | 728                  | 728    | 1,510                | 83      | 210   | 66                 | 2,671    | 95           | 231            | 874      | 341         |
| Birmingham    | 328    | 114     | 12                       | 60     | 29         | 57     | 126    | 225                  | 185    | 5,709                | 6       | 13    | 5                  | 7,417    | 88           | 88             | 88       | 1,249       |
| Boston        | 1,158  | 1,200   | 1,437                    | 890    | 888        | 2,257  | 746    | 1,899                | 1,436  | 5,709                | 798     | 526   | 225                | 7,417    | 744          | 596            | 1,830    | 748         |
| Brownsville   | 47     | 44      | 45                       | 19     | 52         | 119    | 29     | 63                   | 32     | 5,709                | 62      | 20    | 17                 | 7,417    | 744          | 596            | 1,830    | 748         |
| Brownsville   | 106    | 382     | 205                      | 258    | 292        | 256    | 200    | 602                  | 205    | 1,040                | 206     | 69    | 43                 | 1,314    | 20           | 352            | 182      | 327         |
| Buffalo       | 3,748  | 2,081   | 1,590                    | 1,917  | 1,598      | 2,029  | 1,286  | 4,283                | 2,367  | 6,167                | 1,134   | 841   | 96                 | 14,407   | 1,148        | 886            | 2,432    | 323         |
| Chicago       | 1,534  | 813     | 383                      | 1,217  | 1,456      | 357    | 519    | 839                  | 634    | 1,641                | 640     | 112   | 96                 | 8,094    | 469          | 560            | 2,823    | 888         |
| Chickadee     | 1,575  | 603     | 623                      | 410    | 533        | 378    | 402    | 1,208                | 715    | 2,149                | 590     | 162   | 133                | 3,850    | 417          | 651            | 1,65     | 660         |
| Cleveland     | 194    | 263     | 76                       | 141    | 141        | 98     | 98     | 328                  | 148    | 502                  | 163     | 17    | 13                 | 1,850    | 240          | 240            | 165      | 175         |
| Columbus      | 481    | 102     | 16                       | 149    | 60         | 125    | 177    | 465                  | 203    | 408                  | 15      | 6     | 16                 | 1,094    | 30           | 55             | 339      | 15          |
| Dayton        | 103    | 98      | 20                       | 22     | 11         | 172    | 84     | 37                   | 159    | 159                  | 45      | 73    | 64                 | 1,095    | 61           | 19             | 5        | 101         |
| Denver        | 438    | 96      | 160                      | 56     | 240        | 251    | 172    | 484                  | 69     | 636                  | 267     | 23    | 73                 | 727      | 129          | 140            | 282      | 229         |
| Des Moines    | 223    | 210     | 34                       | 118    | 123        | 54     | 78     | 281                  | 138    | 352                  | 125     | 28    | 32                 | 1,181    | 59           | 68             | 96       | 79          |
| Des Moines    | 1,105  | 798     | 602                      | 570    | 682        | 653    | 499    | 1,535                | 785    | 2,527                | 886     | 185   | 154                | 4,619    | 722          | 615            | 990      | 812         |
| Detroit       | 323    | 83      | 32                       | 47     | 40         | 60     | 26     | 98                   | 85     | 202                  | 78      | 43    | 26                 | 62       | 54           | 18             | 50       | 53          |
| Durham        | 93     | 8       | 9                        | 42     | 23         | 76     | 52     | 31                   | 24     | 253                  | 23      | 5     | 4                  | 294      | 20           | 2              | 79       | 23          |
| El Paso       | 78     | 142     | 2                        | 37     | 26         | 16     | 31     | 72                   | 96     | 167                  | 13      | 9     | 5                  | 294      | 4            | 3              | 48       | 25          |
| Evansville    | 259    | 43      | 6                        | 80     | 35         | 57     | 70     | 171                  | 134    | 143                  | 3       | 3     | 3                  | 757      | 99           | 37             | 172      | 6           |
| Fort Worth    | 13     | 138     | 38                       | 53     | 117        | 223    | 65     | 314                  | 49     | 391                  | 107     | 55    | 40                 | 4,572    | 46           | 42             | 143      | 106         |
| Grand Rapids  | 64     | 139     | 115                      | 68     | 128        | 154    | 196    | 283                  | 76     | 639                  | 92      | 43    | 30                 | 4,572    | 46           | 42             | 143      | 90          |
| Hardard       | 485    | 179     | 21                       | 161    | 22         | 171    | 126    | 415                  | 300    | 336                  | 43      | 17    | 11                 | 4,572    | 46           | 42             | 143      | 90          |
| Houston       | 417    | 362     | 67                       | 114    | 171        | 82     | 126    | 202                  | 152    | 35                   | 91      | 5     | 4                  | 2,260    | 118          | 104            | 16       | 226         |
| Indianapolis  | 223    | 92      | 26                       | 85     | 8          | 350    | 265    | 816                  | 487    | 805                  | 206     | 59    | 84                 | 3,721    | 95           | 163            | 593      | 415         |
| Jacksonville  | 930    | 793     | 213                      | 347    | 350        | 246    | 265    | 816                  | 487    | 805                  | 206     | 59    | 84                 | 3,721    | 95           | 163            | 593      | 415         |
| Kansas City   | 156    | 106     | 10                       | 26     | 15         | 11     | 11     | 62                   | 40     | 64                   | 9       | 277   | 23                 | 6,007    | 2            | 18             | 39       | 38          |
| Los Angeles   | 2,736  | 40      | 82                       | 71     | 76         | 95     | 16     | 102                  | 488    | 10                   | 312     | 13    | 23                 | 6,007    | 2            | 18             | 39       | 38          |
| Los Angeles   | 338    | 330     | 55                       | 76     | 95         | 52     | 69     | 284                  | 222    | 395                  | 50      | 6     | 5                  | 6,007    | 2            | 18             | 39       | 38          |
| Los Angeles   | 342    | 361     | 39                       | 96     | 111        | 147    | 147    | 267                  | 196    | 556                  | 50      | 6     | 1                  | 6,007    | 2            | 18             | 39       | 38          |
| Memphis       | 1,177  | 392     | 161                      | 317    | 254        | 421    | 145    | 479                  | 294    | 901                  | 398     | 263   | 114                | 1,721    | 18           | 27             | 133      | 115         |
| Minneapolis   | 976    | 285     | 145                      | 378    | 276        | 385    | 180    | 578                  | 248    | 804                  | 191     | 218   | 71                 | 1,721    | 18           | 27             | 133      | 115         |
| Minneapolis   | 286    | 184     | 16                       | 54     | 72         | 140    | 84     | 169                  | 132    | 383                  | 4       | 6     | 17                 | 1,721    | 18           | 27             | 133      | 115         |
| Nashville     | 500    | 534     | 222                      | 104    | 78         | 1,458  | 78     | 788                  | 167    | 213                  | 415     | 13    | 17                 | 4,083    | 105          | 31             | 278      | 181         |
| Newark        | 88     | 102     | 69                       | 68     | 54         | 149    | 388    | 388                  | 316    | 383                  | 96      | 43    | 23                 | 4,083    | 105          | 31             | 278      | 181         |
| New Haven     | 298    | 164     | 118                      | 164    | 162        | 138    | 316    | 202                  | 316    | 749                  | 116     | 77    | 29                 | 18,647   | 1,078        | 301            | 5,936    | 651         |
| New Orleans   | 5,567  | 3,999   | 5,857                    | 3,760  | 6,249      | 8,767  | 2,814  | 6,790                | 4,602  | 19,242               | 3,423   | 3,384 | 1,192              | 18,647   | 1,078        | 301            | 5,936    | 651         |
| New York      | 5,117  | 3,999   | 5,857                    | 3,760  | 6,249      | 8,767  | 2,814  | 6,790                | 4,602  | 19,242               | 3,423   | 3,384 | 1,192              | 18,647   | 1,078        | 301            | 5,936    | 651         |
| Norfolk       | 386    | 171     | 9                        | 137    | 37         | 35     | 35     | 100                  | 132    | 333                  | 23      | 6     | 15                 | 1,057    | 20           | 24             | 181      | 11          |
| Oklahoma City | 386    | 171     | 9                        | 137    | 37         | 35     | 35     | 100                  | 132    | 333                  | 23      | 6     | 15                 | 1,057    | 20           | 24             | 181      | 11          |
| Omaha         | 402    | 300     | 90                       | 147    | 153        | 112    | 113    | 323                  | 169    | 444                  | 228     | 61    | 61                 | 1,560    | 157          | 84             | 196      | 182         |
| Peoria        | 106    | 106     | 32                       | 20     | 46         | 121    | 35     | 167                  | 66     | 286                  | 51      | 32    | 302                | 1,142    | 24           | 26             | 9        | 68          |
| Philadelphia  | 1,711  | 2,432   | 1,418                    | 1,516  | 1,374      | 1,539  | 979    | 2,862                | 1,987  | 6,396                | 924     | 707   | 302                | 6,439    | 235          | 27             | 2,165    | 1,019       |

|                    | 1,309  | 999    | 1,102  | 910    | 1,225  | 533    | 1,483  | 1,330  | 2,273  | 699    | 302 | 101 | 4,171   | 387    | 1,038  | 1,218  | 805    |
|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----|-----|---------|--------|--------|--------|--------|
| Pittsburgh         | 47     | 20     | 62     | 43     | 49     | 18     | 18     | 70     | 261    | 30     | 22  | 7   | 270     | 357    | 71     | 80     | 45     |
| Portland, Maine    | 485    | 26     | 130    | 237    | 263    | 181    | 345    | 142    | 824    | 92     | 208 | 31  | 418     | 87     | 164    | 168    | 140    |
| Portland, Ore.     | 76     | 183    | 117    | 114    | 116    | 198    | 317    | 222    | 779    | 165    | 58  | 1   | 1,174   | 132    | 65     | 225    | 199    |
| Providence         | 169    | 162    | 6      | 110    | 64     | 47     | 72     | 307    | 373    | 2      | 15  | 5   | 522     | 110    | 103    | 97     | 24     |
| Richmond           | 8      | 117    | 120    | 147    | 164    | 102    | 102    | 107    | 686    | 118    | 17  | 83  | 380     | 237    | 165    | 114    | 186    |
| Rochester          | 1,157  | 1,711  | 479    | 595    | 511    | 307    | 531    | 995    | 1,686  | 344    | 100 | 83  | 6,270   | 237    | 165    | 701    | 1,012  |
| St. Louis          | 362    | 97     | 82     | 110    | 117    | 200    | 87     | 385    | 477    | 287    | 180 | 88  | 6,577   | 181    | 68     | 135    | 122    |
| St. Paul           | 22     | 22     | 46     | 3      | 52     | 28     | 49     | 145    | 317    | 7      | 12  | 0   | 46      | 2      | 33     | 114    | 138    |
| Salt Lake City     | 275    | 14     | 1      | 88     | 109    | 131    | 274    | 128    | 192    | 28     | 12  | 0   | 785     | 2      | 23     | 114    | 284    |
| San Francisco      | 308    | 1      | 138    | 281    | 1,383  | 181    | 88     | 689    | 566    | 183    | 394 | 0   | 3,619   | 93     | 84     | 108    | 231    |
| Seattle            | 206    | 80     | 137    | 129    | 273    | 236    | 177    | 402    | 1,044  | 90     | 76  | 11  | 1,095   | 93     | 166    | 108    | 231    |
| Shreveport         | 227    | 156    | 27     | 72     | 72     | 54     | 69     | 162    | 89     | 160    | 74  | 44  | 623     | 89     | 38     | 17     | 57     |
| Sioux City         | 63     | 25     | 25     | 16     | 36     | 21     | 22     | 92     | 98     | 34     | 2   | 2   | 64      | 12     | 42     | 77     | 78     |
| Spokane            | 51     | 103    | 83     | 120    | 89     | 199    | 23     | 190    | 47     | 69     | 24  | 10  | 414     | 79     | 28     | 182    | 98     |
| Springfield, Mass. | 19     | 113    | 99     | 56     | 81     | 157    | 70     | 221    | 517    | 102    | 21  | 8   | 611     | 128    | 87     | 100    | 131    |
| Syracuse           | 159    | 29     | 31     | 47     | 65     | 61     | 108    | 46     | 2      | 6      | 16  | 6   | 1,380   | 3      | 1      | 17     | 27     |
| Tampa              | 24     | 21     | 2      | 8      | 9      | 9      | 9      | 10     | 49     | 6      | 6   | 1   | 380     | 98     | 95     | 11     | 91     |
| Terre Haute        | 148    | 137    | 36     | 44     | 55     | 74     | 223    | 50     | 353    | 110    | 86  | 5   | 1,167   | 98     | 95     | 11     | 91     |
| Toledo             | 226    | 354    | 294    | 343    | 180    | 147    | 636    | 394    | 697    | 110    | 86  | 9   | 1,465   | 23     | 62     | 292    | 326    |
| Washington         | 14     | 23     | 3      | 5      | 3      | 30     | 26     | 26     | 36     | 4      | 34  | 5   | 1,023   | 27     | 2      | 13     | 37     |
| Worcester          | 46     | 111    | 44     | 43     | 84     | 31     | 101    | 110    | 234    | 34     | 10  | 5   | 503     | 40     | 79     | 12     | 145    |
| Youngstown         |        |        |        |        |        |        |        |        |        |        |     |     |         |        |        |        |        |
| Total:             | 32,283 | 10,188 | 11,186 | 4,809  |        |        |        | 10,645 |        | 7,731  |     |     | 53,704  | 2,037  |        | 5,732  |        |
| 1920.              | 32,764 | 11,238 | 12,961 | 0,611  |        |        |        | 10,704 |        | 9,972  |     |     | 58,841  | 3,800  |        | 7,482  |        |
| 1921.              | 38,448 | 12,409 | 14,683 | 7,075  |        |        |        | 11,953 |        | 11,297 |     |     | 66,608  | 6,781  |        | 10,032 |        |
| 1922.              | 43,130 | 15,808 | 12,002 | 8,466  | 7,023  | 6,527  |        | 16,093 | 24,187 | 8,732  |     |     | 66,440  | 7,291  |        | 9,205  |        |
| 1923.              | 52,013 | 21,209 | 22,193 | 13,082 | 13,693 | 8,439  | 22,425 | 21,480 | 46,271 | 19,557 |     |     | 112,867 | 11,098 | 8,465  | 14,018 | 22,997 |
| 1924.              | 62,414 | 20,277 | 24,947 | 15,167 | 13,856 | 55,468 | 7,474  | 25,536 | 36,847 | 19,055 |     |     | 111,063 | 7,720  | 10,721 | 15,477 | 27,783 |
| 1925.              | 55,322 | 20,875 | 24,785 | 14,225 | 11,856 | 63,823 | 9,184  | 31,838 | 43,313 | 22,288 |     |     | 108,629 | 8,465  | 12,077 | 15,000 | 27,106 |
| 1926.              | 60,912 | 23,955 | 29,359 | 19,441 | 18,283 | 62,902 | 12,164 | 38,958 | 55,184 | 23,288 |     |     | 111,063 | 12,708 | 16,752 | 25,218 | 28,775 |
| 1927.              | 57,163 | 23,955 | 31,389 | 19,441 | 18,283 | 62,902 | 12,164 | 38,958 | 55,184 | 23,288 |     |     | 108,629 | 12,708 | 16,752 | 25,218 | 28,775 |
| 1928.              | 61,415 | 26,466 | 35,311 | 20,607 | 21,739 | 57,651 | 13,349 | 43,069 | 72,218 | 19,264 |     |     | 111,063 | 13,200 | 14,603 | 27,244 | 31,232 |
| 1929.              | 62,486 | 27,407 | 31,031 | 21,223 | 20,977 | 54,616 | 14,126 | 44,003 | 80,412 | 18,264 |     |     | 111,063 | 13,200 | 14,603 | 27,244 | 31,232 |
| 1930.              | 60,640 | 28,032 | 31,217 | 18,750 | 26,801 | 57,512 | 13,570 | 40,492 | 73,838 | 26,577 |     |     | 111,063 | 13,200 | 14,603 | 27,244 | 31,232 |
| 1931.              | 44,593 | 21,214 | 23,677 | 17,295 | 19,229 | 38,317 | 11,957 | 38,067 | 24,046 | 11,097 |     |     | 111,063 | 13,200 | 14,603 | 27,244 | 31,232 |
| 1932.              | 35,996 | 19,695 | 17,641 | 15,621 | 20,377 | 26,582 | 12,089 | 35,901 | 23,535 | 14,318 |     |     | 111,063 | 13,200 | 14,603 | 27,244 | 31,232 |
| 1933.              | 34,565 | 23,662 | 17,707 | 16,637 | 18,479 | 27,196 | 13,030 | 37,486 | 71,056 | 14,083 |     |     | 111,063 | 13,200 | 14,603 | 27,244 | 31,232 |
| 1934.              |        |        |        |        |        |        |        |        |        |        |     |     |         |        |        |        |        |

1 Includes Casabas, Honey Dews, Honey Balls, Persian melons and mixed melons of these classes.

2 Includes romaine.

3 Includes tangerines and satsumas.

4 Includes fresh prunes.

5 Totals include: 1920-22, 12 markets; 1924-26, 36 markets; 1927-34, 66 markets.

Bureau of Agricultural Economics; compiled from daily reports made by common carriers to Bureau representatives in the various markets. Unloads as shown in car lots include boat receipts reduced to car-lot equivalents but exclude truck and l. c. i. express and freight receipts. This table not comparable with table published in Yearbooks prior to 1934.



## STATISTICS OF MISCELLANEOUS CROPS

TABLE 268.—*Beans, dry, edible:*<sup>1</sup> *Acreage, production, value, and foreign trade, United States, 1919-34*

| Year                    | Acreage harvested | Average yield per acre | Production              | Weighted average price per 100 pounds received by producers <sup>2</sup> | Farm value, basis weighted average price <sup>3</sup> | Whole-sale price per 100 pounds at Chicago <sup>4</sup> | Foreign trade, year beginning July |                               |
|-------------------------|-------------------|------------------------|-------------------------|--|---|---|------------------------------------|-------------------------------|
|                         |                   |                        |                         |  |   |   | Imports <sup>5</sup>               | Domestic exports <sup>6</sup> |
|                         | 1,000 acres       | Pounds                 | 1,000 bags <sup>7</sup> | Dollars  | 1,000 dollars   | Dollars   | 1,000 bushels                      | 1,000 bushels                 |
| 1919.....               | 1,162             | 737.0                  | 8,447                   |  |   |   |                                    |                               |
| 1919.....               | 1,077             | 752.0                  | 8,089                   | 6.81   | 47,954  | 7.92  | 3,806                              | 1,993                         |
| 1920.....               | 913               | 661.8                  | 6,042                   | 4.31   | 24,710  | 6.76  | 824                                | 1,218                         |
| 1921.....               | 861               | 706.7                  | 6,085                   | 4.76   | 27,707  | 4.61  | 620                                | 1,100                         |
| 1922.....               | 1,129             | 699.8                  | 7,901                   | 5.32   | 42,984  | 7.46  | 2,623                              | 672                           |
| 1923.....               | 1,322             | 725.2                  | 9,587                   | 5.37   | 48,734  | 7.04  | 1,886                              | 695                           |
| 1924.....               | 1,582             | 587.7                  | 9,298                   | 5.61   | 48,792  | 5.46  | 1,421                              | 549                           |
| 1925.....               | 1,614             | 728.6                  | 11,760                  | 5.00   | 53,774  | 6.16  | 1,271                              | 576                           |
| 1926.....               | 1,611             | 646.2                  | 10,410                  | 5.04   | 46,242  | 4.95  | 1,051                              | 529                           |
| 1927.....               | 1,450             | 629.0                  | 9,120                   | 5.52   | 47,315  | 5.53  | 2,465                              | 427                           |
| 1928.....               | 1,535             | 642.7                  | 9,866                   | 7.27   | 68,622  | 9.00  | 1,505                              | 316                           |
| 1929.....               | <i>1,746</i>      | <i>699.4</i>           | <i>12,212</i>           |  |   |   |                                    |                               |
| 1929.....               | 1,836             | 666.7                  | 12,240                  | 6.77   | 79,118  | 9.76  | 2,534                              | 296                           |
| 1930.....               | 2,110             | 658.8                  | 13,900                  | 4.19   | 55,420  | 6.63  | 1,346                              | 271                           |
| 1931.....               | 1,913             | 671.4                  | 12,843                  | 2.14   | 25,825  | 4.55  | 222                                | 158                           |
| 1932.....               | 1,408             | 741.5                  | 10,440                  | 2.01   | 20,025  | 2.46  | 157                                | 140                           |
| 1933.....               | 1,692             | 729.2                  | 12,338                  | 2.79   | 32,465  | 2.97  | <sup>8</sup> 145                   | 116                           |
| 1934 <sup>9</sup> ..... | 1,378             | 737.2                  | 10,159                  | 3.65   | 34,710  | 3.69  |                                    |                               |

<sup>1</sup> Table includes, besides the ordinary edible beans and limas, the Blackeye of California which is identical with the blackeye pea of the South. Soybeans not included.

<sup>2</sup> Price of cleaned beans.

<sup>3</sup> Farm value of dry, edible beans equals the price of cleaned beans applied to the production of cleaned beans rather than total production.

<sup>4</sup> Compiled from Chicago Daily Trade Bulletin, pea beans.

<sup>5</sup> Imports and exports compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1919-26; January and June issues, 1927-34; and official records of the Bureau of Foreign and Domestic Commerce.

<sup>6</sup> Bags of 100 pounds. Computed from bushels of 60 pounds.

<sup>7</sup> Acreage grown alone.

<sup>8</sup> Imports for consumption.

<sup>9</sup> Preliminary.

Bureau of Agricultural Economics.

Italic figures are census returns; census figures include all States; other figures, estimates of Crop Reporting Board, principal producing States only, revised, 1919-28. See introductory text.

Estimates of acreage, yield, production, price to producers, and farm value previous to 1919, as published in Yearbook for 1933 and earlier years, are not comparable with the revised series in this table.

TABLE 269.—*Beans, dry, edible.<sup>1</sup> Acreage, yield, production, and weighted average price per bag of 100 pounds received by producers, by States, averages, and annual 1933 and 1934*

| State              | Acreage harvested   |                |                   | Yield per acre      |        |                   | Production                 |                            |                            | Price for crop of— |                   |
|--------------------|---------------------|----------------|-------------------|---------------------|--------|-------------------|----------------------------|----------------------------|----------------------------|--------------------|-------------------|
|                    | Average,<br>1927-31 | 1933           | 1934 <sup>2</sup> | Average,<br>1922-31 | 1933   | 1934 <sup>2</sup> | Average,<br>1927-31        | 1933                       | 1934 <sup>2</sup>          | 1933               | 1934 <sup>2</sup> |
|                    | 1,000<br>acres      | 1,000<br>acres | 1,000<br>acres    | Pounds              | Pounds | Pounds            | 1,000<br>bags <sup>3</sup> | 1,000<br>bags <sup>3</sup> | 1,000<br>bags <sup>3</sup> | Dol-<br>lars       | Dol-<br>lars      |
| Maine.....         | 8                   | 9              | 8                 | 843                 | 810    | 780               | 68                         | 73                         | 62                         | 5.20               | 5.30              |
| Vermont.....       | 3                   | 3              | 3                 | 641                 | 540    | 600               | 21                         | 16                         | 18                         | 4.95               | 5.15              |
| New York.....      | 100                 | 117            | 110               | 773                 | 720    | 810               | 797                        | 842                        | 891                        | 3.10               | 3.40              |
| Michigan.....      | 546                 | 510            | 515               | 621                 | 690    | 630               | 2,803                      | 3,519                      | 3,244                      | 2.25               | 2.85              |
| Wisconsin.....     | 7                   | 5              | 6                 | 470                 | 390    | 390               | 28                         | 20                         | 23                         | 2.90               | 3.30              |
| Minnesota.....     | 6                   | 7              | 7                 | 579                 | 420    | 300               | 25                         | 29                         | 21                         | 3.55               | 3.95              |
| Nebraska.....      | 9                   | 16             | 12                | 546                 | 720    | 570               | 51                         | 115                        | 68                         | 2.95               | 4.05              |
| Kansas.....        | 4 12                | 13             | ( <sup>4</sup> )  | -----               | 360    | -----             | 4 51                       | 47                         | -----                      | 2.95               | -----             |
| Montana.....       | 38                  | 34             | 29                | 876                 | 900    | 600               | 380                        | 306                        | 174                        | 2.35               | 3.25              |
| Idaho.....         | 138                 | 121            | 122               | 1,080               | 1,380  | 1,100             | 1,565                      | 1,670                      | 1,342                      | 2.20               | 3.25              |
| Wyoming.....       | 29                  | 31             | 26                | 825                 | 1,080  | 960               | 293                        | 335                        | 250                        | 2.55               | 3.70              |
| Colorado.....      | 374                 | 365            | 186               | 343                 | 330    | 150               | 1,384                      | 1,204                      | 279                        | 2.90               | 5.40              |
| New Mexico.....    | 163                 | 176            | 44                | 371                 | 340    | 150               | 686                        | 598                        | 66                         | 2.90               | 5.55              |
| Arizona.....       | 7                   | 9              | 10                | 425                 | 420    | 400               | 33                         | 38                         | 40                         | 3.50               | 4.50              |
| Oregon.....        | 4 3                 | 1              | 1                 | -----               | 600    | 600               | 4 10                       | 6                          | 6                          | 3.75               | 4.05              |
| California.....    | 328                 | 275            | 299               | 1,002               | 1,280  | 1,229             | 3,412                      | 3,520                      | 3,675                      | 3.45               | 4.35              |
| United States..... | 1,769               | 1,692          | 1,378             | 665.6               | 729.2  | 737.2             | 11,594                     | 12,338                     | 10,159                     | 2.79               | 3.65              |

<sup>1</sup> Table includes, besides the ordinary edible beans and limas, the Blackeye of California which is identical with the blackeyed pea of the South. Soybeans not included.

<sup>2</sup> Preliminary.

<sup>3</sup> Bags of 100 pounds.

<sup>4</sup> Short-time average.

<sup>5</sup> Less than 500 acres.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 270.—*Beans, dry, edible.<sup>1</sup> Production by classes, 100-pound bags, United States, 1924-34*

| Class <sup>2</sup>             | 1924          | 1925          | 1926          | 1927          | 1928          | 1929          | 1930          | 1931          | 1932          | 1933          | 1934 <sup>3</sup> |
|--------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------------|
|                                | 1,000<br>bags | 1,000<br>bags | 1,000<br>bags | 1,000<br>bags | 1,000<br>bags | 1,000<br>bags | 1,000<br>bags | 1,000<br>bags | 1,000<br>bags | 1,000<br>bags | 1,000<br>bags     |
| Pea.....                       | 4,121         | 4,967         | 3,646         | 2,325         | 2,723         | 3,339         | 2,534         | 3,872         | 4,827         | 3,805         | 3,488             |
| Great Northern.....            | 540           | 739           | 856           | 1,174         | 1,253         | 1,764         | 2,114         | 2,030         | 1,073         | 1,646         | 1,402             |
| Small White <sup>4</sup> ..... | 77            | 200           | 180           | 280           | 424           | 415           | 489           | 429           | 226           | 47            | 40                |
| Large White <sup>4</sup> ..... | 40            | 25            | 15            | 15            | 23            | 21            | 24            | 15            | 4             | 3             | 1                 |
| Large and Medium White.....    | 87            | 117           | 27            | -----         | -----         | -----         | -----         | -----         | -----         | -----         | -----             |
| Marrow.....                    | 176           | 222           | 89            | 86            | 112           | 135           | 166           | 212           | 92            | 102           | 108               |
| White Kidney.....              | 78            | 57            | 89            | 52            | 31            | 42            | 39            | 117           | 53            | 64            | 105               |
| Red Kidney <sup>5</sup> .....  | 881           | 886           | 672           | 428           | 575           | 417           | 345           | 633           | 362           | 440           | 422               |
| Small Red.....                 | 73            | 163           | 113           | 220           | 282           | 393           | 520           | 488           | 258           | 329           | 294               |
| Cranberry <sup>4</sup> .....   | 70            | 60            | 73            | 110           | 106           | 107           | 120           | 147           | 71            | 97            | 137               |
| Pink.....                      | 284           | 643           | 600           | 559           | 578           | 620           | 627           | 433           | 515           | 597           | 515               |
| Yelloweye.....                 | 172           | 118           | 128           | 114           | 104           | 104           | 81            | 144           | 76            | 93            | 140               |
| Pinto.....                     | 1,329         | 1,568         | 1,354         | 1,772         | 1,442         | 2,327         | 3,174         | 1,567         | 899           | 1,902         | 502               |
| Bayo <sup>4</sup> .....        | 20            | 15            | 21            | 25            | 12            | 12            | 16            | 20            | 3             | 8             | 15                |
| Blackeye <sup>4</sup> .....    | 277           | 450           | 450           | 300           | 428           | 514           | 852           | 459           | 275           | 587           | 525               |
| Lima <sup>4</sup> .....        | 480           | 800           | 1,250         | 1,010         | 890           | 987           | 1,102         | 1,064         | 872           | 943           | 1,003             |
| Baby lima <sup>4</sup> .....   | 225           | 300           | 580           | 310           | 401           | 486           | 696           | 663           | 322           | 630           | 700               |
| Other <sup>6</sup> .....       | 368           | 430           | 267           | 340           | 382           | 557           | 701           | 550           | 512           | 675           | 667               |
| Total.....                     | 9,298         | 11,760        | 10,410        | 9,120         | 9,866         | 12,240        | 13,900        | 12,843        | 10,440        | 12,338        | 10,159            |

<sup>1</sup> Table includes, besides the ordinary edible beans and limas, the Blackeye of California, which is identical with the blackeyed pea of the South. Soybeans not included.

<sup>2</sup> The bean classification figures in table 263 of 1932 Yearbook, and similar data in preceding issues, were on a different basis from those in table 258 of 1933 Yearbook, table 269 in 1934 Yearbook, and those in the present table. The present grouping has been made upon a classification basis consistent with the United States standards for beans.

<sup>3</sup> Preliminary.

<sup>4</sup> Special California classes.

<sup>5</sup> Including production of dark red beans in Michigan: 69,000 bags in 1930, 76,000 in 1931, 91,000 in 1932, 70,000 in 1933, and 57,000 in 1934.

<sup>6</sup> Including, in some Western States, seed beans of garden varieties.

Bureau of Agricultural Economics; based on reports by growers on proportion of total production made up of each variety, supplemented by investigations of field statisticians. Revised, 1919-28. See introductory text.

TABLE 271.—*Beans, dry, edible: Average price per 100 pounds, 1925-26 to 1934-35*PEA, NEW YORK<sup>1</sup>

| Year    | Sept.       | Oct.        | Nov.        | Dec.        | Jan.        | Feb.        | Mar.        | Apr.        | May         | June        | July        | Aug.        | Average <sup>2</sup> |
|---------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------|
|         | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i>          |
| 1925-26 | 5.55        | 5.80        | 5.99        | 5.90        | 5.75        | 5.57        | 5.26        | 5.08        | 5.11        | 5.13        | 5.06        | 5.07        | 5.44                 |
| 1926-27 | 5.10        | 6.03        | 6.18        | 6.02        | 5.71        | 5.50        | 5.33        | 5.30        | 5.70        | 6.39        | 6.54        | 6.71        | 5.88                 |
| 1927-28 | 6.65        | 6.60        | 6.39        | 6.40        | 6.78        | 7.96        | 9.41        | 10.23       | 10.29       | 10.48       | 10.68       | 10.75       | 8.55                 |
| 1928-29 | 10.75       | 8.90        | 9.38        | 10.00       | 10.42       | 11.29       | 11.05       | 10.55       | 10.68       | 10.42       | 9.56        | 10.16       | 10.26                |
| 1929-30 | 10.19       | 9.50        | 8.29        | 7.91        | 7.97        | 7.81        | 7.26        | 6.83        | 7.12        | 7.08        | 6.88        | 7.58        | 7.87                 |
| 1930-31 | 8.31        | 6.58        | 5.73        | 5.54        | 5.52        | 5.33        | 5.11        | 4.97        | 5.01        | 4.74        | 4.56        | 4.71        | 5.51                 |
| 1931-32 | 4.21        | 3.61        | 3.66        | 3.01        | 2.82        | 2.75        | 2.65        | 2.66        | 2.65        | 2.59        | 2.52        | 2.82        | 2.99                 |
| 1932-33 | 2.67        | 2.25        | 2.01        | 1.88        | 1.84        | 1.82        | 2.10        | 2.67        | 3.15        | 2.89        | 3.08        | 4.00        | 2.58                 |
| 1933-34 | 3.94        | 3.48        | 3.29        | 3.20        | 3.30        | 3.38        | 3.26        | 3.04        | 3.01        | 3.15        | 3.16        | 3.53        | 3.31                 |
| 1934-35 | 4.31        | 4.08        | 3.68        | 3.39        |             |             |             |             |             |             |             |             |                      |

GREAT NORTHERN, CHICAGO<sup>3</sup>

|         |      |      |      |      |      |      |      |      |      |      |      |      |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1926-27 |      |      |      |      |      | 5.91 | 5.85 | 5.85 |      | 8.71 | 9.38 |      |
| 1927-28 | 9.32 |      | 6.30 | 6.13 | 6.46 | 7.14 | 8.44 | 8.40 | 9.57 | 9.62 | 9.20 | 8.14 |
| 1928-29 | 8.38 | 8.00 | 8.44 | 8.86 | 9.47 | 9.96 | 9.95 | 9.50 | 9.50 | 9.54 | 9.90 | 9.23 |
| 1929-30 | 9.97 | 9.88 | 8.21 | 7.37 | 7.25 | 6.75 | 6.25 | 6.25 | 6.20 | 6.06 | 6.25 | 6.31 |
| 1930-31 | 6.75 | 6.25 | 5.46 | 5.20 | 5.06 | 4.82 | 4.50 | 4.46 | 4.37 | 4.60 | 4.44 | 5.04 |
| 1931-32 | 4.81 | 3.49 | 3.36 | 3.44 | 3.50 | 3.38 | 3.38 | 2.85 | 2.45 | 2.62 | 2.81 | 3.24 |
| 1932-33 | 2.91 | 2.75 | 2.52 | 2.58 | 2.47 | 2.48 | 2.70 | 3.04 | 3.83 | 3.68 | 3.60 | 2.90 |
| 1933-34 | 4.42 | 4.14 | 3.94 | 3.69 | 3.75 | 3.75 | 3.86 | 3.88 | 3.71 | 3.49 | 3.62 | 4.23 |
| 1934-35 | 4.52 | 5.08 | 4.97 | 4.82 |      |      |      |      |      |      |      |      |

CALIFORNIA LIMA, NEW YORK<sup>1</sup>

|         |       |       |       |       |       |       |       |       |       |       |       |       |       |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1925-26 | 15.92 | 14.11 | 13.24 | 11.88 | 11.83 | 12.06 | 11.20 | 10.13 | 9.15  | 8.88  | 8.76  | 8.55  | 11.31 |
| 1926-27 | 8.94  | 8.44  | 7.68  | 7.01  | 7.14  | 6.94  | 6.97  | 6.97  | 6.86  | 6.74  | 6.68  | 6.67  | 7.25  |
| 1927-28 | 6.96  | 6.97  | 6.85  | 6.83  | 7.00  | 7.87  | 8.33  | 9.06  | 9.69  | 9.75  | 9.90  | 10.17 | 8.28  |
| 1928-29 | 9.90  | 9.76  | 10.56 | 12.01 | 12.61 | 13.42 | 13.50 | 13.50 | 14.40 | 15.25 | 15.90 | 16.17 | 13.08 |
| 1929-30 | 16.70 | 14.39 | 13.27 | 12.95 | 12.28 | 12.07 | 12.71 | 12.71 | 12.67 | 12.45 | 12.01 | 11.95 | 13.02 |
| 1930-31 | 12.05 | 9.90  | 8.74  | 7.87  | 7.53  | 7.94  | 7.58  | 7.50  | 7.40  | 6.55  | 5.98  | 6.29  | 7.90  |
| 1931-32 | 6.08  | 5.78  | 5.88  | 5.80  | 5.10  | 4.56  | 4.26  | 4.26  | 4.28  | 4.40  | 4.49  | 4.96  | 4.96  |
| 1932-33 | 5.41  | 5.41  | 4.86  | 4.63  | 4.55  | 4.52  | 4.55  | 5.01  | 6.29  | 6.41  | 6.64  | 7.00  | 5.44  |
| 1933-34 | 6.80  | 6.31  | 6.07  | 5.92  | 5.91  | 6.16  | 6.50  | 6.48  | 6.26  | 6.35  | 6.37  | 6.41  | 6.30  |
| 1934-35 | 6.93  | 6.84  | 6.65  | 6.50  |       |       |       |       |       |       |       |       |       |

CALIFORNIA PINK<sup>4</sup>

|         |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1925-26 | 7.25 | 5.76 | 5.16 | 5.23 | 5.73 | 5.46 | 5.38 | 5.20 | 5.14 | 5.52 | 5.30 | 5.02 | 5.52 |
| 1926-27 | 4.76 | 5.02 | 4.90 | 4.90 | 4.92 | 4.73 | 4.76 | 4.89 | 5.18 | 5.80 | 5.82 | 5.62 | 5.09 |
| 1927-28 | 5.23 | 4.71 | 4.70 | 4.68 | 4.92 | 5.74 | 6.14 | 6.23 | 6.34 | 6.25 | 6.00 | 5.48 | 5.54 |
| 1928-29 | 5.11 | 5.45 | 6.26 | 6.54 | 7.37 | 7.14 | 7.10 | 6.86 | 6.93 | 6.97 | 6.86 | 7.45 | 6.67 |
| 1929-30 | 6.25 | 6.21 | 6.02 | 5.92 | 5.61 | 5.56 | 5.42 | 5.40 | 5.61 | 6.25 | 6.38 | 6.38 | 5.92 |
| 1930-31 | 5.68 | 4.39 | 3.90 | 3.97 | 3.96 | 3.90 | 3.81 | 3.62 | 3.41 | 3.29 | 3.12 | 3.04 | 3.84 |
| 1931-32 | 2.79 | 2.94 | 3.69 | 3.90 | 3.55 | 3.12 | 2.77 | 2.70 | 2.68 | 2.68 | 2.62 | 2.93 | 3.03 |
| 1932-33 | 3.28 | 3.05 | 2.74 | 2.71 | 2.52 | 2.31 | 2.40 | 2.92 | 3.09 | 3.63 | 3.76 | 4.11 | 3.09 |
| 1933-34 | 3.76 | 3.37 | 3.38 | 3.02 | 3.00 | 3.26 | 3.17 | 2.92 | 2.79 | 2.88 | 3.21 | 3.55 | 3.19 |
| 1934-35 | 4.79 | 5.30 | 5.44 | 5.41 |      |      |      |      |      |      |      |      |      |

<sup>1</sup> Prices represent prevailing values of the commodity and grade specified, as indicated by sales from receivers to wholesale distributors.

<sup>2</sup> Where prices are missing, average is for months shown.

<sup>3</sup> Quotations are for wholesale prices to the local trade.

<sup>4</sup> F. o. b. rail, California, straight cars.

Bureau of Agricultural Economics; compiled from the Chicago Daily Trade Bulletin; New York Producers Price Current, daily; and California Fruit News, weekly.

## STATISTICS OF MISCELLANEOUS CROPS

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TABLE 272.—*Beans, dry, edible: Car-lot shipments, by State of origin, 1924-25 to 1933-34*

| State             | Crop-movement season <sup>1</sup> |             |             |             |             |             |             |             |                   |                      |
|-------------------|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|----------------------|
|                   | 1924-25                           | 1925-26     | 1926-27     | 1927-28     | 1928-29     | 1929-30     | 1930-31     | 1931-32     | 1932-33           | 1933-34 <sup>2</sup> |
|                   | <i>Cars</i>                       | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>Cars</i> | <i>1,000 bags</i> | <i>1,000 bags</i>    |
| New York.....     | 1,900                             | 1,153       | 916         | 614         | 889         | 1,056       | 961         | 1,922       | 689               | 598                  |
| Michigan.....     | 7,848                             | 10,506      | 8,699       | 4,989       | 6,383       | 5,616       | 5,046       | 6,035       | 4,185             | 2,741                |
| Montana.....      | 124                               | 288         | 280         | 336         | 566         | 733         | 647         | 402         | 112               | 118                  |
| Idaho.....        | 1,336                             | 1,898       | 1,437       | 2,074       | 1,973       | 2,516       | 2,671       | 2,412       | 1,024             | 1,211                |
| Wyoming.....      | 81                                | 82          | 130         | 252         | 347         | 577         | 785         | 499         | 133               | 183                  |
| Colorado.....     | 1,316                             | 2,927       | 1,866       | 1,711       | 1,732       | 2,347       | 4,312       | 1,883       | 491               | 788                  |
| New Mexico.....   | 388                               | 170         | 412         | 608         | 555         | 1,780       | 624         | 901         | 340               | 207                  |
| California.....   | 1,847                             | 2,558       | 3,433       | 3,251       | 2,961       | 3,588       | 2,850       | 2,253       | 869               | 1,413                |
| Other States..... | 134                               | 138         | 114         | 55          | 122         | 239         | 357         | 218         | 62                | 81                   |
| Total.....        | 14,924                            | 19,725      | 17,287      | 13,940      | 15,528      | 18,422      | 18,253      | 17,125      | 7,905             | 7,430                |

<sup>1</sup> Crop-movement season extends from September of one year through August of the following year.<sup>2</sup> Preliminary.<sup>3</sup> In addition to rail shipments, 190,267 bags were shipped by river boats or barges.

Bureau of Agricultural Economics; compiled from monthly reports received by the Bureau from local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included. Beginning 1932-33, shipments are reported in bags of 100 pounds each and the data include all shipments originating at shipping points whether in car lots or less than car lots. The figures therefore are not comparable with those in other years, which are for car-lot shipments only.

TABLE 273.—*Beans, dry, edible:<sup>1</sup> Production in specified countries, bags of 100 pounds, average 1921-22 to 1925-26, annual 1930-31 to 1934-35*

| Country                                     | Average<br>1921-22 to<br>1925-26 | 1930-31           | 1931-32           | 1932-33            | 1933-34            | 1934-35 <sup>2</sup> |
|---|----------------------------------|-------------------|-------------------|--------------------|--------------------|----------------------|
|   | <i>1,000 bags</i>                | <i>1,000 bags</i> | <i>1,000 bags</i> | <i>1,000 bags</i>  | <i>1,000 bags</i>  | <i>1,000 bags</i>    |
| Canada.....                                 | 736                              | 863               | 782               | 685                | 534                | 488                  |
| United States.....                          | 8,926                            | 13,900            | 12,843            | 10,440             | 12,338             | 10,159               |
| Mexico.....                                 | 2,562                            | 1,820             | 2,997             | 2,907              | 4,097              | 2,621                |
| England and Wales.....                      | 3,787                            | 3,118             | 2,690             | 2,647              | 2,633              | 2,600                |
| Scotland.....                               | 75                               | 76                | 59                | 57                 | 61                 | 53                   |
| Netherlands.....                            | 327                              | 429               | 397               | 342                | 338                | -----                |
| France.....                                 | 2,410                            | 3,119             | 3,284             | 3,047              | 2,299              | 2,107                |
| Italy.....                                  | 2,345                            | 3,490             | 2,692             | 3,970              | 3,411              | 4,158                |
| Spain.....                                  | 3,398                            | 3,631             | 3,427             | 3,333              | 3,427              | -----                |
| Germany.....                                | -----                            | 255               | 240               | 239                | 237                | 184                  |
| Czechoslovakia.....                         | 273                              | 214               | 198               | 204                | 145                | 353                  |
| Austria.....                                | 162                              | 276               | 247               | 208                | 232                | 328                  |
| Hungary.....                                | 810                              | 1,017             | 1,335             | <sup>3</sup> 1,909 | <sup>3</sup> 1,780 | <sup>3</sup> 1,631   |
| Yugoslavia.....                             | <sup>1</sup> 1,748               | 3,352             | 2,205             | <sup>3</sup> 3,306 | <sup>3</sup> 2,582 | <sup>3</sup> 2,690   |
| Rumania.....                                | 4,681                            | 4,476             | 7,284             | 7,142              | 7,290              | <sup>3</sup> 6,173   |
| Bulgaria.....                               | 1,055                            | 1,364             | 1,787             | <sup>3</sup> 1,658 | <sup>3</sup> 1,817 | <sup>3</sup> 1,675   |
| Poland.....                                 | 684                              | 912               | 1,010             | 810                | 764                | -----                |
| Greece.....                                 | <sup>4</sup> 175                 | 169               | 258               | 311                | 327                | -----                |
| Japan <sup>5</sup> .....                    | 1,513                            | 2,919             | 1,619             | 1,078              | 2,444              | 1,614                |
| Chosen <sup>6</sup> .....                   | <sup>6</sup> 116                 | 103               | 70                | 79                 | -----              | -----                |
| Brazil.....                                 | <sup>6</sup> 12,519              | 14,868            | -----             | -----              | -----              | -----                |
| Chile.....                                  | 969                              | 1,408             | 1,404             | 2,166              | 1,836              | -----                |
| Madagascar.....                             | <sup>4</sup> 392                 | 247               | 337               | 351                | -----              | -----                |
| Total countries reporting, all periods..... | 31,083                           | 40,004            | 39,922            | 39,258             | 41,663             | 36,650               |
| Total, all countries.....                   | -----                            | 62,026            | -----             | -----              | -----              | -----                |

<sup>1</sup> Excluding soy, mung, adzuki, broad, and horse beans and similar classes not commonly used as edible beans in the United States.<sup>2</sup> Preliminary.<sup>3</sup> Unofficial estimate.<sup>4</sup> 4-year average.<sup>5</sup> Production in Hokkaido Province, where most of the dry edible bean varieties are grown.<sup>6</sup> 3-year average.

Bureau of Agricultural Economics; official sources and International Institute of Agriculture except as otherwise stated.

Figures are for the harvesting seasons 1921 to 1934 in the Northern Hemisphere and 1921-22 to 1934-35 in the Southern Hemisphere.

TABLE 274.—*Soybeans: Acreage, yield, production, and weighted average price per bushel received by producers, by States, average 1927-31, and annual 1933 and 1934*

| State               | Soybeans gathered    |                   |                |                   |                         |                   | Soybeans produced <sup>1</sup> |             |                   |                  |           |                   |                                      |                   |
|---------------------|----------------------|-------------------|----------------|-------------------|-------------------------|-------------------|--------------------------------|-------------|-------------------|------------------|-----------|-------------------|--------------------------------------|-------------------|
|                     | Acreage <sup>1</sup> |                   | Yield per acre |                   | Total quantity gathered |                   | Acreage                        |             |                   | Production       |           |                   | Price of beans gathered for crop of— |                   |
|                     |                      |                   |                |                   |                         |                   |                                |             |                   |                  |           |                   |                                      |                   |
|                     | 1933                 | 1934 <sup>2</sup> | 1933           | 1934 <sup>2</sup> | 1933                    | 1934 <sup>2</sup> | Average, 1927-31               | 1933        | 1934 <sup>2</sup> | Average, 1927-31 | 1933      | 1934 <sup>2</sup> | 1933                                 | 1934 <sup>2</sup> |
|                     | 1,000 acres          | 1,000 acres       | Bu.            | Bu.               | 1,000 bu.               | 1,000 bu.         | 1,000 acres                    | 1,000 acres | 1,000 acres       | 1,000 bu.        | 1,000 bu. | 1,000 bu.         | Dollars                              | Dollars           |
| Ohio.....           | 21                   | 24                | 16.0           | 17.0              | 336                     | 408               | 41                             | 21          | 24                | 618              | 336       | 408               | 1.03                                 | 1.10              |
| Indiana.....        | 116                  | 150               | 15.0           | 16.0              | 1,740                   | 2,400             | 127                            | 116         | 150               | 1,919            | 1,740     | 2,400             | .86                                  | 1.20              |
| Illinois.....       | 290                  | 501               | 15.0           | 19.0              | 4,350                   | 9,519             | 263                            | 290         | 501               | 4,350            | 4,350     | 9,519             | .81                                  | 1.10              |
| Michigan.....       | 2                    | 2                 | 12.0           | 10.5              | 24                      | 21                | 2                              | 2           | 2                 | 21               | 24        | 21                | .89                                  | .90               |
| Wisconsin.....      | 6                    | 5                 | 11.5           | 12.0              | 69                      | 60                | 2                              | 6           | 5                 | 23               | 69        | 60                | 1.17                                 | 1.50              |
| Iowa.....           | 82                   | 148               | 17.0           | 13.5              | 1,394                   | 2,000             | 42                             | 82          | 148               | 643              | 1,394     | 2,000             | 1.03                                 | 1.25              |
| Missouri.....       | 132                  | 117               | 11.5           | 7.5               | 1,518                   | 878               | 96                             | 132         | 117               | 1,077            | 1,518     | 878               | 1.19                                 | 1.50              |
| Kansas.....         | 11                   | 5                 | 8.5            | 5.0               | 94                      | 25                | 8                              | 11          | 5                 | 72               | 94        | 25                | 1.12                                 | 1.50              |
| Delaware.....       | 27                   | 26                | 14.0           | 17.0              | 378                     | 442               | 21                             | 27          | 26                | 246              | 378       | 442               | 1.18                                 | 1.20              |
| Maryland.....       | 6                    | 6                 | 13.0           | 15.0              | 78                      | 90                | 6                              | 6           | 6                 | 71               | 78        | 90                | 1.12                                 | 1.25              |
| Virginia.....       | 16                   | 16                | 12.5           | 13.5              | 200                     | 216               | 33                             | 26          | 24                | 377              | 325       | 324               | 1.24                                 | 1.25              |
| West Virginia.....  | 3                    | 2                 | 12.0           | 13.0              | 36                      | 26                | 3                              | 3           | 2                 | 36               | 36        | 26                | 1.78                                 | 2.25              |
| North Carolina..... | 76                   | 84                | 11.0           | 12.0              | 836                     | 1,008             | 215                            | 200         | 200               | 3,104            | 2,200     | 2,400             | 1.27                                 | 1.80              |
| South Carolina..... | 6                    | 5                 | 10.0           | 9.0               | 60                      | 45                | 30                             | 25          | 14                | 339              | 250       | 126               | 1.44                                 | 1.90              |
| Georgia.....        | 6                    | 6                 | 9.0            | 10.5              | 54                      | 63                | 16                             | 10          | 9                 | 185              | 90        | 94                | 1.83                                 | 2.30              |
| Kentucky.....       | 6                    | 5                 | 12.5           | 13.0              | 75                      | 65                | 20                             | 19          | 18                | 237              | 235       | 234               | 1.25                                 | 1.50              |
| Tennessee.....      | 17                   | 14                | 7.5            | 7.5               | 128                     | 105               | 65                             | 17          | 14                | 727              | 128       | 105               | 1.33                                 | 1.50              |
| Alabama.....        | 4                    | 5                 | 12.0           | 13.0              | 48                      | 65                | 14                             | 7           | 8                 | 178              | 84        | 104               | 1.63                                 | 1.80              |
| Mississippi.....    | 7                    | 10                | 14.0           | 12.5              | 98                      | 125               | 34                             | 23          | 29                | 477              | 322       | 362               | 1.60                                 | 2.30              |
| Arkansas.....       | 4                    | 6                 | 14.5           | 12.0              | 58                      | 72                | 17                             | 11          | 17                | 240              | 160       | 204               | 1.49                                 | 2.10              |
| Louisiana.....      | 6                    | 12                | 10.5           | 10.0              | 63                      | 120               | 76                             | 107         | 124               | 812              | 1,124     | 1,240             | 1.85                                 | 2.10              |
| Oklahoma.....       | 3                    | 3                 | 11.0           | 3.0               | 33                      | 33                | 9                              | 10          | 4                 | 94               | 44        | 12                | 1.35                                 | 1.90              |
| United States.....  | 847                  | 1,152             | 13.8           | 15.4              | 11,670                  | 17,762            | 1,140                          | 1,145       | 1,447             | 15,845           | 14,982    | 21,074            | 1.11                                 | 1.32              |

<sup>1</sup> Solid equivalent of acres from which soybeans were gathered.<sup>2</sup> Excluding soybeans cut for hay. Soybeans planted in corn and soybeans grazed or hogged off are included for the Southern States where they are important, but omitted for Northern States where relatively unimportant.<sup>3</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 275.—*Soybeans: Production in specified countries, 1924-25 to 1934-35*

| Crop year                  | United States | Manchuria <sup>1</sup> | Chosen    | Japan     | Netherlands Indies |
|----------------------------|---------------|------------------------|-----------|-----------|--------------------|
|                            | 1,000 bu.     | 1,000 bu.              | 1,000 bu. | 1,000 bu. | 1,000 bu.          |
| 1924-25.....               | 5,190         | 92,667                 | 18,723    | 16,596    | 3,536              |
| 1925-26.....               | 5,131         | 116,667                | 23,600    | 15,473    | 3,933              |
| 1926-27.....               | 6,083         | 135,000                | 22,276    | 12,512    | 3,672              |
| 1927-28.....               | 7,596         | 163,319                | 24,300    | 16,704    | 3,971              |
| 1928-29.....               | 8,819         | 177,804                | 19,510    | 15,239    | 4,303              |
| 1929-30.....               | 8,670         | 178,389                | 20,434    | 13,592    | 3,917              |
| 1930-31.....               | 12,217        | 193,564                | 22,989    | 15,531    | 4,693              |
| 1931-32.....               | 15,463        | 192,058                | 21,155    | 12,719    | 4,722              |
| 1932-33.....               | 13,121        | 156,817                | 22,578    | 12,349    | 5,471              |
| 1933-34.....               | 11,670        | 169,086                | 23,324    | .....     | 6,542              |
| 1934-35 <sup>2</sup> ..... | 17,762        | 132,269                | 21,961    | .....     | .....              |

<sup>1</sup> Manchuria produces about 97 percent of the soybean production of China. Production figures for China are not available.<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; compiled from official sources.

TABLE 276.—*Soybeans: Average price per bushel received by producers, United States, 1925-26 to 1934-35*

| Year         | Oct.<br>15  | Nov.<br>15  | Dec.<br>15  | Jan.<br>15  | Feb.<br>15  | Mar.<br>15  | Apr.<br>15  | May<br>15   | June<br>15  | July<br>15  | Aug.<br>15  | Sept.<br>15 | Weight-<br>ed av-<br>erage |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------------|
|              | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i>                |
| 1925-26----- | 2.27        | 2.18        | 2.17        | 2.38        | 2.33        | 2.39        | 2.27        | 2.37        | 2.67        | 2.71        | 2.81        | 2.27        | 2.35                       |
| 1926-27----- | 1.97        | 1.85        | 1.83        | 1.90        | 2.03        | 1.98        | 2.07        | 2.15        | 2.20        | 2.14        | 2.06        | 1.91        | 2.00                       |
| 1927-28----- | 1.86        | 1.70        | 1.61        | 1.70        | 1.69        | 1.85        | 1.93        | 2.06        | 2.13        | 2.12        | 2.01        | 1.89        | 1.84                       |
| 1928-29----- | 1.72        | 1.69        | 1.70        | 1.82        | 1.93        | 2.13        | 2.19        | 2.30        | 2.41        | 2.46        | 2.15        | 1.87        | 1.92                       |
| 1929-30----- | 1.79        | 1.70        | 1.73        | 1.85        | 1.91        | 2.00        | 2.07        | 2.11        | 2.16        | 1.66        | 1.90        | 1.80        | 1.86                       |
| 1930-31----- | 1.64        | 1.48        | 1.44        | 1.46        | 1.40        | 1.42        | 1.38        | 1.39        | 1.29        | 1.12        | .94         | .82         | 1.42                       |
| 1931-32----- | .58         | .52         | .61         | .62         | .59         | .66         | .65         | .64         | .61         | .58         | .58         | .57         | .61                        |
| 1932-33----- | .55         | .45         | .44         | .45         | .45         | .48         | .58         | .86         | .98         | 1.04        | .94         | .85         | .64                        |
| 1933-34----- | .68         | .69         | .73         | .81         | 1.01        | 1.16        | 1.26        | 1.25        | 1.45        | 1.54        | 1.25        | 1.05        | 1.11                       |
| 1934-35----- | .95         | .89         | 1.11        |             |             |             |             |             |             |             |             |             | 1.32                       |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; averages for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1930 Yearbook, table 298. Only monthly prices are comparable.

TABLE 277.—*Soybeans for seed: Average wholesale selling price per bushel at Baltimore and St. Louis, 1925-34*

| Year      | Baltimore   |             |             |             |             |             | St. Louis   |             |             |             |             |             |
|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|           | Jan.        | Feb.        | Mar.        | Apr.        | May         | Average     | Jan.        | Feb.        | Mar.        | Apr.        | May         | Average     |
|           | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> |
| 1925----- | 2.85        | 2.95        | 3.15        | 2.95        | 2.35        | 2.85        | 2.40        | 2.40        | 2.40        | 2.25        | 2.10        | 2.31        |
| 1926----- | 2.00        | 2.05        | 2.10        | 2.15        | 2.75        | 2.21        | 2.15        | 2.15        | 2.30        | 2.55        | 2.90        | 2.41        |
| 1927----- | 1.80        | 1.80        | 1.80        | 1.80        | 1.85        | 1.81        | 2.70        | 2.70        | 2.40        | 2.50        | 2.70        | 2.60        |
| 1928----- | 1.95        | 1.90        | 1.95        | 1.95        | 2.15        | 1.98        | 1.80        | 1.80        | 1.85        | 2.00        | 2.25        | 1.94        |
| 1929----- | 2.25        | 2.35        | 2.40        | 2.40        | 2.70        | 2.42        | 2.55        | 2.55        | 2.60        | 2.75        | 2.85        | 2.66        |
| 1930----- | 2.10        | 2.10        | 2.10        | 2.25        | 2.65        | 2.24        | 2.15        | 2.25        | 2.25        | 2.25        | 2.25        | 2.23        |
| 1931----- | 2.25        | 2.25        | 2.25        | 2.25        | 2.25        | 2.25        | 1.80        | 1.80        | 1.80        | 1.80        | 1.95        | 1.83        |
| 1932----- | .90         | .90         | .90         | .90         | .85         | .89         | 1.05        | 1.05        | .90         | .90         | .80         | .94         |
| 1933----- | .80         | .80         | .80         | 1.00        | 1.45        | .97         | .80         | .80         | .90         | 1.05        | 1.30        | .97         |
| 1934----- | 1.75        | 1.75        | 1.85        | 1.80        | 1.70        | 1.75        | 1.60        | 2.00        | 2.00        | 2.00        | 1.75        | 1.85        |

Bureau of Agricultural Economics. Compiled from weekly reports to the Bureau from wholesale seedsmen in the markets. These prices are the average wholesale selling prices for high-quality seed. Data for earlier years in 1928 Yearbook, table 242.

TABLE 278.—*Soybean oil: Soybeans crushed and crude oil produced, 1924-25 to 1933-34*

| Year         | Soybeans crushed <sup>1</sup> |                         |                         |                         |                         | Oil produced            |                         |                         |                         |                         |
|--------------|-------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|              | Oct.-<br>Dec.                 | Jan.-<br>Mar.           | Apr.-<br>June           | July-<br>Sept.          | Total                   | Oct.-<br>Dec.           | Jan.-<br>Mar.           | Apr.-<br>June           | July-<br>Sept.          | Total                   |
|              | <i>1,000<br/>pounds</i>       | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> |
| 1924-25----- | 3,550                         | 7,478                   | 3,038                   | 4,336                   | 18,402                  | 777                     | 870                     | 360                     | 562                     | 2,569                   |
| 1925-26----- | 5,486                         | 7,746                   | 7,450                   | 358                     | 21,040                  | 728                     | 990                     | 874                     | 46                      | 2,638                   |
| 1926-27----- | 5,132                         | 6,804                   | 6,032                   | 2,104                   | 20,072                  | 735                     | 882                     | 776                     | 286                     | 2,659                   |
| 1927-28----- | 8,788                         | 10,278                  | 8,792                   | 5,654                   | 33,512                  | 1,164                   | 1,289                   | 1,132                   | 789                     | 4,374                   |
| 1928-29----- | 11,480                        | 21,190                  | 9,686                   | 10,550                  | 52,896                  | 1,506                   | 3,046                   | 1,277                   | 1,458                   | 7,285                   |
| 1929-30----- | 39,658                        | 25,288                  | 20,716                  | 14,324                  | 99,986                  | 5,231                   | 3,343                   | 2,905                   | 1,945                   | 13,424                  |
| 1930-31----- | 43,546                        | 64,824                  | 77,346                  | 58,432                  | 244,148                 | 6,194                   | 9,107                   | 10,996                  | 8,351                   | 34,588                  |
| 1931-32----- | 77,006                        | 102,332                 | 65,498                  | 38,072                  | 283,498                 | 10,665                  | 14,682                  | 9,237                   | 5,351                   | 39,945                  |
| 1932-33----- | 72,682                        | 68,004                  | 48,680                  | 23,810                  | 208,176                 | 10,155                  | 8,687                   | 6,884                   | 3,422                   | 28,078                  |
| 1933-34----- | 53,752                        | 56,002                  | 46,064                  | 27,414                  | 183,232                 | 7,610                   | 7,989                   | 6,704                   | 3,894                   | 26,197                  |

<sup>1</sup> The output of meal is usually about 80 percent of the soybeans crushed.

Bureau of Agricultural Economics; compiled from reports of the Census, Animal and Vegetable Fats and Oils.

TABLE 279.—*Soybeans and soybean oil: International trade, average 1925-29, annual 1931-33*

## SOYBEANS

| Country                          | Calendar year   |              |              |              |              |              |                   |              |
|----------------------------------|-----------------|--------------|--------------|--------------|--------------|--------------|-------------------|--------------|
|                                  | Average 1925-29 |              | 1931         |              | 1932         |              | 1933 <sup>1</sup> |              |
|                                  | Exports         | Imports      | Exports      | Imports      | Exports      | Imports      | Exports           | Imports      |
| PRINCIPAL EXPORTING COUNTRIES    | 1,000 pounds    | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 pounds      | 1,000 pounds |
| China <sup>2</sup> .....         | 3,731,214       | 0            | 5,074,744    | 0            | 2,302,596    | 0            | 12,744            | 0            |
| Total.....                       | 3,731,214       | 0            | 5,074,744    | 0            | 2,302,596    | 0            | 12,744            | 0            |
| PRINCIPAL IMPORTING COUNTRIES    |                 |              |              |              |              |              |                   |              |
| Germany.....                     | 0               | 1,390,622    | 0            | 2,236,727    | 0            | 2,616,842    | 0                 | 2,581,366    |
| Japan.....                       | 5,574           | 1,015,825    | 4,483        | 1,220,267    | 3,230        | 1,040,083    | 1,409             | 955,854      |
| Denmark.....                     | 0               | 394,965      | 0            | 523,993      | 0            | 503,955      | 0                 | 516,224      |
| United Kingdom.....              | 0               | 305,643      | 0            | 247,072      | 0            | 349,668      | 0                 | 352,657      |
| Sweden.....                      | 0               | 166,799      | 0            | 68,753       | 0            | 19,356       | 0                 | 126,947      |
| Italy.....                       | 442             | 97,395       | 0            | 88,820       | 0            | 47,409       | 0                 | 13,916       |
| Netherlands.....                 | 1,192           | 58,510       | 1,182        | 70,952       | 688          | 91,897       | 177               | 86,518       |
| United States <sup>3</sup> ..... | 0               | 4,064        | 0            | 3,544        | 0            | 2,551        | 0                 | 470          |
| Total.....                       | 6,808           | 3,433,823    | 5,665        | 4,460,128    | 3,918        | 4,682,261    | 1,586             | 4,643,952    |

## SOYBEAN OIL

|                               |         |         |         |         |         |         |         |         |
|-------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| PRINCIPAL EXPORTING COUNTRIES |         |         |         |         |         |         |         |         |
| China.....                    | 244,694 | 0       | 195,119 | 0       | 62,205  | 0       | 10      | 0       |
| Germany.....                  | 45,828  | 30,094  | 55,137  | 20,441  | 68,424  | 8,463   | 70,682  | 2,743   |
| Denmark.....                  | 36,742  | 3,670   | 40,937  | 1,764   | 49,352  | 4,977   | 41,285  | 4,058   |
| Japan.....                    | 14,393  | 323     | 16,009  | 7,568   | 14,115  | 7,548   | 2,965   | 0       |
| Sweden.....                   | 12,917  | 10,182  | 2,312   | 24,302  | 1,686   | 28,645  | 1,655   | 15,739  |
| Total.....                    | 354,774 | 44,179  | 310,514 | 47,075  | 195,782 | 42,633  | 116,587 | 22,540  |
| PRINCIPAL IMPORTING COUNTRIES |         |         |         |         |         |         |         |         |
| Netherlands.....              | 40,024  | 109,176 | 24,140  | 62,175  | 31,808  | 56,945  | 26,130  | 37,559  |
| United Kingdom.....           | 49,942  | 75,917  | 32,294  | 62,265  | 5,909   | 61,130  | 1,380   | 44,365  |
| United States.....            | 4,528   | 19,545  | 4,551   | 4,916   | 2,647   | 405     | 1,569   | 3,669   |
| France.....                   | 159     | 17,401  | 0       | 7,337   | 345     | 8,672   | 104     | 8,506   |
| Morocco.....                  | 0       | 8,855   | 0       | 9,911   | 0       | 16,073  | 0       | 7,770   |
| Algeria.....                  | 19      | 6,394   | 70      | 2       | 0       | 1,131   | 0       | 96      |
| Austria.....                  | 17      | 6,011   | 1       | 6,062   | 1       | 6,556   | 0       | 20,674  |
| Canada <sup>4</sup> .....     | 0       | 989     | 0       | 1,900   | 0       | 1,578   | 0       | 2,412   |
| Total.....                    | 94,689  | 245,288 | 60,986  | 154,568 | 40,710  | 152,500 | 29,183  | 125,251 |

<sup>1</sup> Preliminary.<sup>2</sup> These figures are for yellow soybeans, which variety constitutes fully 98 percent of the soybean exports, according to Agricultural Commissioner Paul O. Nyhus.<sup>3</sup> Manchuria not included after June 1932.<sup>4</sup> 3-year average.<sup>5</sup> Imports for consumption.<sup>6</sup> Domestic exports of soybeans are not separately reported in Foreign Commerce and Navigation of the United States; if any, included with exports of "oilseeds." Soybeans inspected for export began in October 1931, there being 7,978,800 pounds exported from October to December; inspected for export calendar year 1932, 253,353,480 pounds and for 1933, 15,831,740 pounds.<sup>7</sup> International Yearbook of Agricultural Statistics.<sup>8</sup> 4-year average.<sup>9</sup> Soybeans included with cake and meal.

Bureau of Agricultural Economics; official sources except where otherwise noted.

TABLE 280.—*Soybean oil, crude: Average price per pound, in barrels, New York, by months, 1910-11 to 1934-35*

| Year    | Imported              |       |       |       |       |       |        |       |        |       |       |       | Average           |
|---------|-----------------------|-------|-------|-------|-------|-------|--------|-------|--------|-------|-------|-------|-------------------|
|         | Oct.                  | Nov.  | Dec.  | Jan.  | Feb.  | Mar.  | Apr.   | May   | June   | July  | Aug.  | Sept. |                   |
|         | Cents                 | Cents | Cents | Cents | Cents | Cents | Cents  | Cents | Cents  | Cents | Cents | Cents |                   |
| 1910-11 |                       |       |       | 7.31  | 7.81  | 7.56  | 6.97   | 6.88  | 6.33   | 6.38  | 6.34  | 6.62  | <sup>1</sup> 6.91 |
| 1911-12 | 7.62                  | 7.31  | 6.90  | 6.75  | 6.55  | 6.76  | 6.69   | 6.81  | 6.51   | 6.57  | 6.56  | 6.56  | 6.80              |
| 1912-13 | 6.62                  | 6.38  | 6.00  | 5.91  | 6.04  | 5.94  | 5.94   | 6.00  | 6.00   | 6.27  | 6.50  | 6.50  | 6.18              |
| 1913-14 | 6.48                  | 6.44  | 6.44  | 6.44  | 6.45  | 6.38  | 6.38   | 6.38  | 6.25   | 6.25  | 6.80  | 6.84  | 6.48              |
| 1914-15 | 6.75                  | 5.84  | 5.34  | 5.70  | 6.23  | 6.41  | 6.42   | 6.58  | 6.34   | 6.16  | 5.94  | 5.91  | 6.14              |
| 1915-16 | 6.61                  | 7.25  | 7.60  | 8.22  | 8.64  | 9.25  | 9.46   | 9.11  | 8.25   | 7.78  | 7.78  | 8.48  | 8.20              |
| 1916-17 | 10.06                 | 11.11 | 11.90 | 12.06 | 12.56 | 13.35 | 13.88  | 14.72 | 14.90  | 13.60 | 13.88 | 14.72 | 13.06             |
| 1917-18 | 15.70                 | 16.75 | 17.55 | 18.17 | 18.70 | 19.18 | 19.62  | 19.25 | 18.22  | 18.28 | 18.25 | 18.31 | 18.16             |
| 1918-19 | 18.38                 | 17.70 | 17.00 | 15.27 | 13.06 | 12.95 | 15.41  | 17.00 | 18.84  | 20.16 | 19.12 | 17.25 | 16.84             |
| 1919-20 | 17.47                 | 17.62 | 17.69 | 19.02 | 18.28 | 18.69 | 17.94  | 17.33 | 17.00  | 15.55 | 13.81 | 13.60 | 16.90             |
| 1920-21 | 12.32                 | 11.22 | 9.00  | 8.55  | 6.56  | 6.25  | 7.00   | 7.62  | 7.86   | 8.11  | 8.72  | 8.28  | 8.46              |
| 1921-22 | 9.22                  | 8.88  | 9.15  | 8.88  | 9.12  | 10.81 | 11.38  | nom   | nom    | nom   | nom   | nom   | <sup>1</sup> 9.68 |
| 1922-23 | 10.00                 | 10.33 | 10.69 | 11.34 | 11.69 | 12.35 | 13.00  | 12.91 | 12.62  | 12.00 | 11.62 | 11.28 | 11.65             |
| 1923-24 | 10.84                 | 11.00 | 11.38 | 12.00 | 12.50 | 12.25 | 11.75  | 12.16 | 12.03  | 12.44 | 12.60 | 12.69 | 11.97             |
| 1924-25 | 12.69                 | 13.12 | 13.44 | 13.32 | 13.25 | 13.81 | 13.38  | 13.38 | 13.38  | 13.38 | 13.38 | 13.38 | 13.28             |
| 1925-26 | 12.88                 | 13.38 | 13.38 | 13.38 | 13.38 | 13.38 | 13.38  | 13.38 | 13.38  | 13.75 | 14.00 | 14.00 | 13.57             |
| 1926-27 | 13.60                 | 12.50 | 12.03 | 12.02 | 12.12 | 12.12 | 12.19  | 12.38 | 12.19  | 12.12 | 12.12 | 12.12 | 12.29             |
| 1927-28 | 12.12                 | 12.12 | 12.12 | 12.12 | 12.12 | 12.12 | 12.12  | 12.12 | 12.19  | 12.38 | 12.38 | 12.38 | 12.21             |
| 1928-29 | 12.38                 | 12.38 | 12.38 | 12.38 | 12.38 | 12.38 | 11.98n | 11.75 | 11.75n | 11.12 | 11.12 | 11.32 | 11.91             |
| 1929-30 | 12.62                 | 12.62 | 12.25 | 12.25 | 12.03 | 11.88 | 11.38  | 11.25 | 10.98  | 10.88 | 10.88 | 10.82 | 11.64             |
| 1930-31 | 10.38                 | 10.25 | 10.12 | 9.44  | 8.75  | 8.75  | 8.75   | 8.75  | 8.75   | 8.75  | 8.75  | 8.75  | 9.18              |
| 1931-32 | 8.75                  | 8.75  | 8.75  | 8.25  | 8.25  | 8.25  | 8.25   |       |        |       |       |       | <sup>1</sup> 8.46 |
|         | Domestic <sup>2</sup> |       |       |       |       |       |        |       |        |       |       |       |                   |
|         | Oct.                  | Nov.  | Dec.  | Jan.  | Feb.  | Mar.  | Apr.   | May   | June   | July  | Aug.  | Sept. |                   |
|         | Cents                 | Cents | Cents | Cents | Cents | Cents | Cents  | Cents | Cents  | Cents | Cents | Cents |                   |
| 1929-30 | 13.00                 | 13.00 | 12.50 | 11.75 | 11.50 | 10.72 | 10.40  | 10.64 | 10.80  | 10.72 | 10.38 | 10.18 | 11.30             |
| 1930-31 | 9.30                  | 8.50  | 8.30  | 7.38  | 7.50  | 7.50  | 7.45   | 7.30  | 7.30   | 7.30  | 7.20  | 6.55  | 7.63              |
| 1931-32 | 5.65                  | 5.55  | 5.18  | 4.81  | 4.45  | 4.45  | 4.45   | 4.40  | 4.15   | 4.12  | 4.12  | 4.12  | 4.62              |
| 1932-33 | 4.40                  | 4.25  | 4.20  | 4.35  | 4.50  | 4.72  | 4.90   | 6.30  | 6.05   | 8.20  | 9.05  | 8.20  | 5.84              |
| 1933-34 | 7.60                  | 7.30  | 6.98  | 6.80  | 7.05  | 7.30  | 7.30   | 7.30  | 7.30   | 7.30  | 7.30  | 7.30  | 7.24              |
| 1934-35 | 7.30                  | 7.55  | 8.70  |       |       |       |        |       |        |       |       |       |                   |

<sup>1</sup> Average for months quoted.<sup>2</sup> Domestic oil not quoted prior to October 1929, as production in this country had not reached commercial proportions.

Bureau of Agricultural Economics. Compiled from the Oil, Paint, and Drug Reporter. Prices are average of quotations on Saturdays during the month.

Through August 1911, quotations are for English, spot; September 1911-April 1916, English or Manchuria; May 1916-January 1919, Manchuria only; February 1919, and subsequently, origin not indicated. Quotations for imported do not appear after April 1932 as importations had practically ceased as a result of a prohibitive tariff.

TABLE 281.—*Cowpeas: Average price per bushel received by producers, United States, 1925-26 to 1934-35*

| Year    | Aug. 15 | Sept. 15 | Oct. 15 | Nov. 15 | Dec. 15 | Jan. 15 | Feb. 15 | Mar. 15 | Apr. 15 | May 15 | June 15 | July 15 | Weighted average  |
|---------|---------|----------|---------|---------|---------|---------|---------|---------|---------|--------|---------|---------|-------------------|
|         | Dol.    | Dol.     | Dol.    | Dol.    | Dol.    | Dol.    | Dol.    | Dol.    | Dol.    | Dol.   | Dol.    | Dol.    | Dol.              |
| 1925-26 | 3.24    | 3.12     | 2.93    | 2.98    | 2.87    | 3.03    | 3.21    | 3.37    | 3.50    | 3.43   | 3.47    | 3.47    | 3.25              |
| 1926-27 | 3.22    | 2.79     | 2.34    | 2.05    | 1.95    | 1.94    | 1.94    | 1.89    | 1.93    | 1.80   | 1.90    | 1.93    | 1.99              |
| 1927-28 | 1.84    | 1.80     | 1.70    | 1.72    | 1.65    | 1.71    | 1.74    | 1.76    | 1.86    | 2.00   | 2.09    | 2.09    | 1.90              |
| 1928-29 | 2.01    | 1.82     | 1.83    | 1.83    | 2.02    | 2.15    | 2.45    | 2.63    | 2.88    | 3.05   | 3.24    | 3.19    | 2.63              |
| 1929-30 | 2.99    | 2.49     | 2.30    | 2.22    | 2.28    | 2.40    | 2.59    | 2.73    | 2.85    | 2.93   | 3.00    | 2.93    | 2.64              |
| 1930-31 | 2.66    | 2.41     | 2.20    | 2.05    | 1.88    | 1.80    | 1.75    | 1.82    | 1.87    | 1.93   | 1.96    | 1.89    | 1.94              |
| 1931-32 | 1.63    | 1.27     | .98     | .93     | .93     | .92     | .86     | .88     | .82     | .76    | .72     | .67     | .88               |
| 1932-33 | .70     | .67      | .70     | .63     | .60     | .60     | .60     | .62     | .69     | .89    | 1.02    | 1.21    | .83               |
| 1933-34 | 1.30    | 1.06     | .94     | .87     | .92     | 1.03    | 1.26    | 1.45    | 1.61    | 1.63   | 1.60    | 1.57    | 1.34              |
| 1934-35 | 1.42    | 1.32     | 1.26    | 1.25    | 1.30    |         |         |         |         |        |         |         | <sup>1</sup> 1.66 |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; based upon returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 Yearbook, table 245. Only monthly prices are comparable.



TABLE 282.—*Cowpeas: Acreage, yield, production, and weighted average price per bushel received by producers, by States, average 1927-31, and annual 1933 and 1934*

| State      | Cowpeas gathered     |                   |                   |                   |                               |                   | Cowpeas produced <sup>2</sup> |                |                   |                     |              |                   |              |                   | Price of<br>peas gathered<br>for crop of— |  |
|------------|----------------------|-------------------|-------------------|-------------------|-------------------------------|-------------------|-------------------------------|----------------|-------------------|---------------------|--------------|-------------------|--------------|-------------------|---|--|
|            | Acreage <sup>1</sup> |                   | Yield per<br>acre |                   | Total<br>quantity<br>gathered |                   | Acreage                       |                |                   | Production          |              |                   |              |                   |   |  |
|            | 1933                 | 1934 <sup>3</sup> | 1933              | 1934 <sup>3</sup> | 1933                          | 1934 <sup>3</sup> | Average,<br>1927-31           | 1933           | 1934 <sup>3</sup> | Average,<br>1927-31 | 1933         | 1934 <sup>3</sup> | 1933         | 1934 <sup>3</sup> |   |  |
|            | 1,000<br>acres       | 1,000<br>acres    | Bu.               | Bu.               | 1,000<br>bu.                  | 1,000<br>bu.      | 1,000<br>acres                | 1,000<br>acres | 1,000<br>acres    | 1,000<br>bu.        | 1,000<br>bu. | 1,000<br>bu.      | Dol-<br>lars | Dol-<br>lars      |   |  |
| Ind.-----  | 7                    | 14                | 8.0               | 9.0               | 56                            | 126               | 15                            | 7              | 14                | 125                 | 56           | 126               | 1.06         | 1.30              |   |  |
| Ill.-----  | 56                   | 60                | 7.0               | 8.0               | 392                           | 480               | 50                            | 56             | 60                | 396                 | 392          | 480               | 1.13         | 1.35              |   |  |
| Mo.-----   | 25                   | 30                | 10.0              | 8.5               | 250                           | 255               | 25                            | 25             | 30                | 245                 | 250          | 255               | 1.36         | 1.85              |   |  |
| Kans.----- | 1                    | 1                 | 5.8               | 4.0               | 6                             | 4                 | 2                             | 1              | 1                 | 14                  | 6            | 4                 | 1.75         | 1.75              |   |  |
| Del.-----  | 2                    | 2                 | 12.0              | 14.0              | 24                            | 28                | 3                             | 2              | 2                 | 31                  | 24           | 28                | 1.35         | 1.45              |   |  |
| Md.-----   | 2                    | 1                 | 10.0              | 10.0              | 20                            | 10                | 1                             | 2              | 1                 | 14                  | 20           | 10                | 1.23         | 1.45              |   |  |
| Va.-----   | 8                    | 9                 | 8.5               | 9.5               | 68                            | 86                | 18                            | 19             | 20                | 157                 | 162          | 190               | 1.33         | 1.65              |   |  |
| N. C.----- | 32                   | 38                | 10.0              | 9.0               | 320                           | 342               | 92                            | 89             | 104               | 1,011               | 890          | 936               | 1.38         | 1.75              |   |  |
| S. C.----- | 96                   | 99                | 8.0               | 7.5               | 768                           | 742               | 182                           | 150            | 151               | 1,464               | 1,200        | 1,132             | 1.15         | 1.45              |   |  |
| Ga.-----   | 91                   | 65                | 9.4               | 9.5               | 855                           | 618               | 141                           | 161            | 112               | 1,316               | 1,513        | 1,064             | 1.32         | 1.65              |   |  |
| Fla.-----  | 8                    | 7                 | 7.0               | 11.0              | 56                            | 77                | 20                            | 21             | 19                | 204                 | 147          | 209               | 1.63         | 1.80              |   |  |
| Ky.-----   | 8                    | 7                 | 9.0               | 11.5              | 72                            | 80                | 23                            | 19             | 19                | 264                 | 171          | 218               | 1.21         | 1.40              |   |  |
| Tenn.----- | 30                   | 26                | 5.5               | 5.5               | 165                           | 143               | 54                            | 30             | 26                | 495                 | 165          | 143               | 1.21         | 1.45              |   |  |
| Ala.-----  | 76                   | 78                | 10.0              | 9.5               | 760                           | 741               | 122                           | 92             | 90                | 1,291               | 920          | 855               | 1.40         | 1.65              |   |  |
| Miss.----- | 42                   | 65                | 9.4               | 8.5               | 395                           | 552               | 76                            | 58             | 95                | 781                 | 545          | 808               | 1.38         | 1.75              |   |  |
| Ark.-----  | 44                   | 36                | 12.0              | 8.0               | 528                           | 288               | 70                            | 96             | 90                | 829                 | 1,152        | 720               | 1.23         | 1.65              |   |  |
| La.-----   | 23                   | 26                | 10.8              | 8.0               | 248                           | 203               | 38                            | 66             | 67                | 432                 | 713          | 536               | 1.54         | 1.90              |   |  |
| Okl.-----  | 15                   | 14                | 9.5               | 7.0               | 142                           | 98                | 34                            | 43             | 39                | 374                 | 408          | 273               | 1.53         | 1.75              |   |  |
| Tex.-----  | 74                   | 76                | 9.2               | 5.5               | 681                           | 418               | 141                           | 141            | 143               | 1,534               | 1,297        | 786               | 1.45         | 1.85              |   |  |
| U. S.----- | 640                  | 654               | 9.1               | 8.1               | 5,806                         | 5,296             | 1,106                         | 1,078          | 1,083             | 10,989              | 10,031       | 8,773             | 1.34         | 1.66              |   |  |

<sup>1</sup> Solid equivalent of acres from which cowpeas were gathered.<sup>2</sup> Excluding cowpeas cut for hay. Cowpeas planted in corn and cowpeas grazed or hogged off are included for the Southern States where they are important but omitted for the Northern States where relatively unimportant.<sup>3</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 283.—*Cowpeas for seed: Average wholesale selling price per bushel at Baltimore and St. Louis, 1925-34*

| Year | Baltimore |      |      |      |      |         | St. Louis |      |      |      |      |         |
|------|-----------|------|------|------|------|---------|-----------|------|------|------|------|---------|
|      | Jan.      | Feb. | Mar. | Apr. | May  | Average | Jan.      | Feb. | Mar. | Apr. | May  | Average |
|      | Dol.      | Dol. | Dol. | Dol. | Dol. | Dol.    | Dol.      | Dol. | Dol. | Dol. | Dol. | Dol.    |
| 1925 | 3.90      | 3.90 | 3.90 | 3.90 | 3.95 | 3.91    | 3.90      | 4.00 | 4.10 | 4.10 | 4.10 | 4.04    |
| 1926 | 4.25      | 4.25 | 4.25 | 4.25 | 4.20 | 4.24    | 4.50      | 4.45 | 4.20 | 4.10 | 4.05 | 4.26    |
| 1927 | 2.25      | 2.25 | 2.15 | 2.10 | 2.10 | 2.17    | 2.40      | 2.40 | 2.40 | 2.40 | 2.40 | 2.40    |
| 1928 | 1.80      | 1.80 | 2.05 | 2.20 | 2.30 | 2.03    | 2.40      | 2.40 | 2.40 | 2.50 | 2.70 | 2.48    |
| 1929 | 2.85      | 3.30 | 3.75 | 3.75 | 3.75 | 3.48    | 3.50      | 3.60 | 3.60 | 3.70 | 3.75 | 3.63    |
| 1930 | 3.30      | 3.30 | 3.30 | 3.30 | 3.30 | 3.30    | 3.15      | 3.15 | 3.15 | 3.10 | 3.00 | 3.11    |
| 1931 | 3.00      | 2.90 | 2.50 | 2.50 | 2.55 | 2.69    | 2.40      | 2.40 | 2.40 | 2.40 | 2.55 | 2.43    |
| 1932 | 1.05      | 1.10 | 1.10 | 1.10 | 1.00 | 1.07    | 1.20      | 1.20 | 1.10 | 1.05 | 1.05 | 1.12    |
| 1933 | .80       | .80  | .80  | 1.00 | 1.40 | .96     | .85       | .85  | .90  | 1.00 | 1.40 | 1.00    |
| 1934 | 2.25      | 2.25 | 2.25 | 2.20 | 2.00 | 2.20    | 2.00      | 2.00 | 2.00 | 2.00 | 1.75 | 1.95    |

Bureau of Agricultural Economics. Compiled from weekly reports to the Bureau from wholesale seedsmen in the markets. These prices are the average wholesale selling prices for high-quality seed. Data for earlier years in 1928 Yearbook, table 246.

TABLE 284.—*Velvetbeans: <sup>1</sup> Acreage, yield, production, and price per ton received by producers Dec. 1, by States, averages, and annual 1933 and 1934*

| State               | Acreage             |                |                   | Yield per acre      |       |                   | Total production       |                        |                        | Price Dec. 1 |       |
|---------------------|---------------------|----------------|-------------------|---------------------|-------|-------------------|------------------------|------------------------|------------------------|--------------|-------|
|                     | Average,<br>1927-31 | 1933           | 1934 <sup>2</sup> | Average,<br>1924-31 | 1933  | 1934 <sup>2</sup> | Average,<br>1927-31    | 1933                   | 1934 <sup>2</sup>      | 1933         | 1934  |
|                     | 1,000<br>acres      | 1,000<br>acres | 1,000<br>acres    | Lb.                 | Lb.   | Lb.               | 1,000<br>short<br>tons | 1,000<br>short<br>tons | 1,000<br>short<br>tons | Dol.         | Dol.  |
| South Carolina..... | 63                  | .44            | 50                | 942                 | 950   | 1,000             | 31                     | 21                     | 25                     | 13.00        | 17.40 |
| Georgia.....        | 740                 | 728            | 795               | 774                 | 820   | 760               | 318                    | 298                    | 302                    | 8.40         | 12.50 |
| Florida.....        | 118                 | 136            | 126               | 848                 | 600   | 650               | 49                     | 41                     | 41                     | 5.10         | 10.20 |
| Alabama.....        | 323                 | 458            | 527               | 761                 | 900   | 910               | 128                    | 206                    | 240                    | 8.00         | 11.60 |
| Mississippi.....    | 33                  | 43             | 56                | 1,055               | 1,300 | 1,140             | 20                     | 28                     | 32                     | 14.00        | 15.90 |
| Louisiana.....      | 31                  | 33             | 41                | 1,069               | 920   | 930               | 17                     | 15                     | 19                     | 14.00        | 17.00 |
| United States..     | 1,311               | 1,442          | 1,595             | 797.6               | 844.7 | 826.3             | 565                    | 609                    | 659                    | 8.60         | 12.51 |

<sup>1</sup> The figures refer to the yield and entire production of velvetbeans in the hull. The pods are gathered from one-fourth to one-third of the acreage.

<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 285.—*Broomcorn: Acreage, production, and average price per ton received by producers, United States, 1919-34*

| Year      | Acreage<br>har-<br>vested | Average<br>yield per<br>acre | Produc-<br>tion      | Price <sup>1</sup> | Year                    | Acreage<br>har-<br>vested | Average<br>yield per<br>acre | Produc-<br>tion      | Price <sup>1</sup> |
|-----------|---------------------------|------------------------------|----------------------|--------------------|-------------------------|---------------------------|------------------------------|----------------------|--------------------|
| 1919..... | Acres<br>338,000          | Pounds<br>834.6              | Short tons<br>56,500 | Dollars<br>-----   | 1927.....               | Acres<br>232,000          | Pounds<br>846.7              | Short tons<br>40,200 | Dollars<br>103.21  |
| 1919..... | 327,000                   | 333.4                        | 54,600               | 155.00             | 1928.....               | 299,000                   | 360.7                        | 53,800               | 97.06              |
| 1920..... | 266,000                   | 283.9                        | 37,800               | 127.54             | 1929.....               | 312,000                   | 305.5                        | 47,600               | -----              |
| 1921..... | 222,000                   | 352.8                        | 39,200               | 71.63              | 1930.....               | 310,000                   | 304.5                        | 47,300               | 114.52             |
| 1922..... | 275,000                   | 278.1                        | 38,200               | 219.27             | 1931.....               | 391,000                   | 254.5                        | 49,800               | 65.60              |
| 1923..... | 536,000                   | 303.2                        | 81,400               | 160.17             | 1932.....               | 298,000                   | 303.2                        | 45,200               | 45.15              |
| 1924..... | 434,000                   | 358.0                        | 77,700               | 96.00              | 1933.....               | 304,000                   | 243.6                        | 36,900               | 37.43              |
| 1925..... | 226,000                   | 276.2                        | 31,200               | 142.60             | 1934.....               | 280,000                   | 214.3                        | 30,100               | 104.75             |
| 1926..... | 319,000                   | 342.7                        | 54,700               | 79.07              | 1934 <sup>2</sup> ..... | 300,000                   | 198.8                        | 29,800               | 183.29             |

<sup>1</sup> From 1919 to 1924, Nov. 15 price; 1925 and 1926, Dec. 1 price; 1927-33, average price for the crop marketing season; 1934, Dec. 1 price.

<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board, revised, 1919-28. See introductory text.

TABLE 286.—*Broomcorn: Acreage, yield, production, and average price per ton received by producers, by States, averages, and annual 1933 and 1934*

| State           | Acreage harvested   |                |                   | Yield per acre      |       |                   | Production          |               |                   | Price for crop of— |                   |
|-----------------|---------------------|----------------|-------------------|---------------------|-------|-------------------|---------------------|---------------|-------------------|--------------------|-------------------|
|                 | Average,<br>1927-31 | 1933           | 1934 <sup>1</sup> | Average,<br>1922-31 | 1933  | 1934 <sup>1</sup> | Average,<br>1927-31 | 1933          | 1934 <sup>1</sup> | 1933               | 1934 <sup>1</sup> |
|                 | 1,000<br>acres      | 1,000<br>acres | 1,000<br>acres    | Lb.                 | Lb.   | Lb.               | Short<br>tons       | Short<br>tons | Short<br>tons     | Dol.               | Dol.              |
| Illinois.....   | 26                  | 38             | 49                | 520                 | 320   | 450               | 6,520               | 6,100         | 11,000            | 150                | 215               |
| Missouri.....   | 1                   | 1              | ( <sup>2</sup> )  | 324                 | 325   | -----             | 180                 | 200           | -----             | 137                | -----             |
| Kansas.....     | 42                  | 41             | 25                | 323                 | 200   | 120               | 6,520               | 4,100         | 1,500             | 99                 | 185               |
| Oklahoma.....   | 133                 | 99             | 120               | 285                 | 210   | 160               | 19,120              | 10,400        | 9,000             | 89                 | 155               |
| Texas.....      | 11                  | 8              | 16                | 320                 | 290   | 365               | 1,420               | 1,200         | 2,900             | 102                | 160               |
| Colorado.....   | 55                  | 55             | 52                | 295                 | 160   | 110               | 8,100               | 4,400         | 2,900             | 93                 | 180               |
| New Mexico..... | 39                  | 38             | 38                | 273                 | 195   | 132               | 5,400               | 3,700         | 2,500             | 94                 | 175               |
| United States.. | 306                 | 280            | 300               | 312.8               | 214.3 | 198.8             | 47,260              | 30,100        | 29,800            | 104.75             | 183.29            |

<sup>1</sup> Preliminary.

<sup>2</sup> Dec. 1 price.

<sup>3</sup> Less than 500 acres

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 290.—*Hay, wild:*<sup>1</sup> *Acreage, yield, production, and price per ton received by producers Dec. 1, by States, averages, and annual 1933 and 1934*

| State and division  | Acreage harvested |             |                   | Yield per acre   |            |                   | Production       |                  |                   | Price Dec. 1 |       |
|---------------------|-------------------|-------------|-------------------|------------------|------------|-------------------|------------------|------------------|-------------------|--------------|-------|
|                     | Average, 1927-31  | 1933        | 1934 <sup>2</sup> | Average, 1922-31 | 1933       | 1934 <sup>2</sup> | Average, 1927-31 | 1933             | 1934 <sup>2</sup> | 1933         | 1934  |
|                     | 1,000 acres       | 1,000 acres | 1,000 acres       | Short tons       | Short tons | Short tons        | 1,000 short tons | 1,000 short tons | 1,000 short tons  | Dol.         | Dol.  |
| Maine.....          | 6                 | 5           | 5                 | 0.95             | 0.80       | 0.85              | 5                | 4                | 4                 | 7.80         | 10.30 |
| New Hampshire.....  | 5                 | 4           | 5                 | .87              | .80        | .90               | 5                | 3                | 4                 | 9.50         | 11.50 |
| Vermont.....        | 7                 | 6           | 7                 | .93              | .80        | .90               | 6                | 5                | 6                 | 8.40         | 11.60 |
| Massachusetts.....  | 7                 | 6           | 7                 | .97              | .90        | 1.00              | 7                | 5                | 7                 | 10.00        | 11.10 |
| Rhode Island.....   | 1                 | 1           | 1                 | .86              | 1.00       | 1.05              | 1                | 1                | 1                 | 11.60        | 10.30 |
| Connecticut.....    | 5                 | 4           | 4                 | 1.09             | 1.10       | 1.10              | 6                | 4                | 4                 | 11.00        | 12.00 |
| New York.....       | 46                | 38          | 38                | 1.00             | .95        | .75               | 49               | 36               | 28                | 7.10         | 10.90 |
| New Jersey.....     | 13                | 13          | 14                | 1.30             | 1.50       | 1.35              | 17               | 20               | 19                | 8.00         | 9.00  |
| Pennsylvania.....   | 13                | 9           | 11                | .92              | .80        | .65               | 12               | 7                | 7                 | 7.00         | 10.60 |
| North Atlantic..... | 102               | 86          | 92                | 1.01             | .99        | .87               | 109              | 85               | 80                | 7.91         | 10.54 |
| Ohio.....           | 4                 | 3           | 5                 | .97              | .70        | .45               | 3                | 2                | 2                 | 5.00         | 9.50  |
| Indiana.....        | 10                | 9           | 10                | .92              | .85        | .60               | 9                | 8                | 6                 | 5.00         | 9.30  |
| Illinois.....       | 22                | 21          | 20                | .85              | .80        | .50               | 19               | 17               | 10                | 5.60         | 10.00 |
| Michigan.....       | 34                | 31          | 37                | 1.08             | .95        | .80               | 37               | 29               | 46                | 4.70         | 10.60 |
| Wisconsin.....      | 220               | 350         | 357               | 1.20             | 1.10       | .90               | 248              | 385              | 321               | 6.20         | 11.00 |
| Minnesota.....      | 1,877             | 1,772       | 1,418             | .87              | .70        | .50               | 1,887            | 1,240            | 709               | 5.10         | 11.20 |
| Iowa.....           | 213               | 163         | 140               | .99              | .90        | .75               | 209              | 147              | 105               | 5.00         | 12.00 |
| Missouri.....       | 124               | 141         | 116               | 1.08             | .75        | .55               | 132              | 106              | 64                | 5.30         | 13.20 |
| North Dakota.....   | 1,067             | 1,713       | 805               | .80              | .60        | .35               | 1,394            | 1,038            | 282               | 4.70         | 12.80 |
| South Dakota.....   | 2,273             | 1,256       | 440               | .60              | .40        | .35               | 1,377            | 502              | 154               | 4.50         | 15.70 |
| Nebraska.....       | 2,587             | 2,933       | 2,258             | .73              | .60        | .35               | 2,100            | 1,790            | 790               | 4.20         | 14.40 |
| Kansas.....         | 915               | 714         | 550               | .94              | .68        | .55               | 927              | 436              | 302               | 4.30         | 12.50 |
| North Central.....  | 10,245            | 9,106       | 6,176             | .79              | .63        | .45               | 8,342            | 5,710            | 2,791             | 4.78         | 12.69 |
| Delaware.....       | 2                 | 3           | 3                 | 1.16             | 1.15       | 1.40              | 3                | 3                | 4                 | 6.00         | 8.00  |
| Maryland.....       | 3                 | 3           | 3                 | .92              | .85        | .85               | 2                | 3                | 3                 | 7.00         | 10.60 |
| Virginia.....       | 10                | 9           | 9                 | .75              | .90        | .80               | 8                | 8                | 7                 | 8.00         | 10.00 |
| West Virginia.....  | 8                 | 5           | 10                | .95              | .95        | .60               | 7                | 5                | 5                 | 7.70         | 10.00 |
| North Carolina..... | 25                | 20          | 22                | 1.03             | 1.00       | 1.00              | 26               | 20               | 22                | 11.00        | 13.20 |
| South Carolina..... | 12                | 12          | 12                | .60              | .70        | .80               | 8                | 8                | 10                | 10.00        | 14.00 |
| Georgia.....        | 19                | 18          | 20                | .98              | .95        | .95               | 19               | 17               | 19                | 7.30         | 10.00 |
| Florida.....        | 4                 | 4           | 4                 | .84              | .60        | .60               | 3                | 2                | 2                 | 10.40        | 12.50 |
| South Atlantic..... | 82                | 74          | 83                | .94              | .89        | .87               | 75               | 66               | 72                | 8.88         | 11.51 |
| Kentucky.....       | 24                | 7           | 8                 | .93              | 1.00       | .90               | 24               | 7                | 7                 | 6.00         | 8.80  |
| Tennessee.....      | 47                | 40          | 42                | .79              | .75        | .75               | 36               | 30               | 32                | 6.50         | 9.20  |
| Alabama.....        | 41                | 42          | 38                | .76              | .75        | .70               | 32               | 32               | 27                | 7.80         | 10.00 |
| Mississippi.....    | 37                | 38          | 38                | 1.02             | 1.00       | 1.00              | 39               | 38               | 38                | 6.70         | 8.30  |
| Arkansas.....       | 144               | 168         | 160               | 1.04             | 1.05       | .70               | 146              | 176              | 112               | 6.00         | 10.80 |
| Louisiana.....      | 19                | 26          | 20                | 1.09             | 1.20       | .70               | 20               | 31               | 20                | 6.50         | 7.00  |
| Oklahoma.....       | 490               | 451         | 442               | .95              | .70        | .60               | 488              | 316              | 265               | 4.60         | 10.60 |
| Texas.....          | 187               | 217         | 217               | .92              | .80        | .60               | 176              | 174              | 130               | 6.90         | 10.50 |
| South Central.....  | 989               | 989         | 974               | .95              | .81        | .65               | 960              | 804              | 631               | 5.79         | 10.25 |
| Montana.....        | 617               | 595         | 446               | .85              | .75        | .65               | 534              | 446              | 290               | 6.50         | 11.00 |
| Idaho.....          | 92                | 96          | 86                | 1.16             | 1.00       | .90               | 106              | 96               | 77                | 4.80         | 8.00  |
| Wyoming.....        | 310               | 297         | 190               | .88              | .60        | .50               | 265              | 178              | 95                | 6.70         | 12.70 |
| Colorado.....       | 365               | 373         | 298               | 1.00             | 1.10       | .80               | 354              | 410              | 238               | 5.20         | 11.90 |
| New Mexico.....     | 23                | 23          | 14                | .86              | .75        | .60               | 20               | 17               | 8                 | 7.80         | 13.50 |
| Arizona.....        | 11                | 10          | 10                | .73              | .90        | .80               | 8                | 9                | 8                 | 6.00         | 10.00 |
| Utah.....           | 69                | 63          | 60                | 1.06             | 1.10       | .70               | 70               | 69               | 42                | 4.90         | 10.50 |
| Nevada.....         | 125               | 115         | 80                | .96              | .90        | .60               | 118              | 104              | 48                | 4.50         | 8.00  |
| Washington.....     | 30                | 29          | 27                | 1.29             | 1.15       | 1.30              | 40               | 33               | 35                | 8.40         | 7.40  |
| Oregon.....         | 280               | 298         | 255               | .84              | 1.10       | .95               | 224              | 328              | 240               | 6.70         | 7.00  |
| California.....     | 128               | 122         | 110               | 1.08             | 1.00       | .85               | 143              | 122              | 94                | 5.80         | 7.00  |
| Western.....        | 2,000             | 2,021       | 1,574             | .94              | .90        | .75               | 1,882            | 1,812            | 1,175             | 5.99         | 9.75  |
| United States.....  | 13,418            | 12,276      | 8,899             | .83              | .69        | .53               | 11,368           | 8,477            | 4,749             | 5.20         | 11.58 |

<sup>1</sup> Includes prairie, marsh, and salt grasses.<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 291.—Hay, loose: Average price per ton received by producers, United States, 1925-26 to 1934-35

## ALL HAY

| Year    | July 15     | Aug. 15     | Sept. 15    | Oct. 15     | Nov. 15     | Dec. 15     | Jan. 15     | Feb. 15     | Mar. 15     | Apr. 15     | May 15      | June 15     | Weighted average <sup>1</sup> |
|---------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------------------|
|         | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i>                   |
| 1925-26 | 12.48       | 12.25       | 12.42       | 12.47       | 13.07       | 13.40       | 13.31       | 13.03       | 12.97       | 12.78       | 13.12       | 12.98       | 12.77                         |
| 1926-27 | 12.96       | 13.04       | 12.83       | 13.08       | 13.22       | 13.47       | 13.38       | 13.04       | 13.48       | 13.26       | 13.20       | 13.10       | 13.24                         |
| 1927-28 | 11.71       | 9.97        | 10.51       | 10.63       | 10.54       | 10.55       | 10.60       | 10.24       | 10.19       | 10.29       | 10.70       | 11.01       | 11.29                         |
| 1928-29 | 10.86       | 10.39       | 10.59       | 10.60       | 10.89       | 11.23       | 11.60       | 12.06       | 12.37       | 12.30       | 12.15       | 11.88       | 11.87                         |
| 1929-30 | 11.17       | 10.85       | 11.05       | 11.07       | 11.18       | 11.04       | 11.16       | 11.19       | 10.95       | 10.97       | 10.98       | 10.91       | 11.03                         |
| 1930-31 | 10.47       | 11.31       | 12.14       | 12.17       | 12.19       | 11.33       | 11.21       | 10.92       | 10.66       | 10.59       | 10.54       | 9.97        | 11.03                         |
| 1931-32 | 9.30        | 9.05        | 8.88        | 8.57        | 8.63        | 8.71        | 8.60        | 8.45        | 8.69        | 8.74        | 8.45        | 7.60        | 8.68                          |
| 1932-33 | 6.95        | 6.82        | 6.60        | 6.54        | 6.49        | 6.14        | 6.03        | 5.91        | 5.89        | 6.12        | 6.37        | 6.43        | 6.17                          |
| 1933-34 | 6.99        | 7.53        | 7.53        | 7.54        | 7.69        | 7.69        | 7.78        | 8.07        | 8.34        | 8.59        | 8.94        | 9.75        | 8.06                          |
| 1934-35 | 10.18       | 12.50       | 13.03       | 13.40       | 13.53       | 13.38       |             |             |             |             |             |             | <sup>2</sup> 13.07            |

## ALFALFA

|         |       |       |       |       |       |       |       |       |       |       |       |       |       |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1925-26 | 13.02 | 13.00 | 12.91 | 13.41 | 13.74 | 14.14 | 13.90 | 14.24 | 13.50 | 13.53 | 13.17 | 13.33 | 13.05 |
| 1926-27 | 12.94 | 13.15 | 13.13 | 13.29 | 13.79 | 13.67 | 13.83 | 14.21 | 14.38 | 13.85 | 13.59 | 13.03 | 13.58 |
| 1927-28 | 11.73 | 11.47 | 11.34 | 11.52 | 11.75 | 12.02 | 12.09 | 11.84 | 12.46 | 12.56 | 12.90 | 12.42 | 11.94 |
| 1928-29 | 11.98 | 11.82 | 12.20 | 12.82 | 13.29 | 13.90 | 14.54 | 15.34 | 16.07 | 16.20 | 15.50 | 14.50 | 13.73 |
| 1929-30 | 13.12 | 13.17 | 13.50 | 13.84 | 14.00 | 14.41 | 14.66 | 14.45 | 13.90 | 13.42 | 12.87 | 12.14 | 13.73 |
| 1930-31 | 11.44 | 12.16 | 12.85 | 12.97 | 12.94 | 12.52 | 12.21 | 11.74 | 11.29 | 11.01 | 10.87 | 10.24 | 12.13 |
| 1931-32 | 9.80  | 9.86  | 9.67  | 9.58  | 9.94  | 10.31 | 10.14 | 10.25 | 10.84 | 10.79 | 9.97  | 8.63  | 10.05 |
| 1932-33 | 7.38  | 7.15  | 7.27  | 7.05  | 7.01  | 6.77  | 6.70  | 6.39  | 6.34  | 6.46  | 6.71  | 6.69  | 6.99  |
| 1933-34 | 7.48  | 7.90  | 8.04  | 8.26  | 8.26  | 8.36  | 8.47  | 8.58  | 8.68  | 8.84  | 9.28  | 10.25 | 8.42  |
| 1934-35 | 10.84 | 13.51 | 14.69 | 15.07 | 15.28 | 15.38 |       |       |       |       |       |       |       |

## CLOVER

|         |       |       |       |       |       |       |       |       |       |       |       |       |       |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1925-26 | 13.03 | 13.67 | 14.06 | 14.09 | 14.74 | 15.28 | 14.79 | 14.82 | 14.79 | 14.88 | 15.13 | 15.07 | 14.48 |
| 1926-27 | 14.40 | 14.25 | 14.00 | 14.71 | 14.76 | 15.24 | 15.71 | 16.16 | 15.64 | 15.51 | 15.21 | 14.65 | 15.07 |
| 1927-28 | 13.11 | 12.16 | 11.78 | 11.91 | 11.89 | 11.91 | 12.24 | 11.96 | 12.02 | 12.28 | 12.51 | 12.63 | 12.20 |
| 1928-29 | 12.52 | 12.25 | 12.50 | 12.58 | 13.01 | 13.05 | 13.41 | 13.99 | 13.93 | 13.43 | 13.24 | 12.92 | 12.97 |
| 1929-30 | 11.90 | 11.61 | 11.82 | 11.77 | 11.82 | 11.97 | 12.24 | 12.54 | 12.31 | 12.27 | 12.19 | 12.25 | 11.98 |
| 1930-31 | 11.71 | 10.39 | 14.62 | 14.62 | 14.62 | 13.52 | 12.78 | 12.45 | 12.87 | 12.37 | 12.21 | 11.28 | 13.38 |
| 1931-32 | 13.80 | 10.26 | 9.81  | 9.65  | 9.65  | 9.70  | 9.72  | 9.14  | 9.46  | 9.46  | 8.38  | 9.65  | 9.85  |
| 1932-33 | 8.04  | 8.03  | 7.97  | 7.53  | 7.63  | 7.62  | 7.50  | 7.27  | 7.43  | 7.69  | 7.83  | 7.77  | 7.74  |
| 1933-34 | 8.17  | 8.78  | 9.04  | 9.03  | 9.10  | 9.13  | 9.39  | 9.69  | 10.25 | 10.71 | 11.07 | 11.73 | 9.53  |
| 1934-35 | 12.17 | 14.50 | 15.56 | 15.69 | 15.78 | 15.99 |       |       |       |       |       |       |       |

## TIMOTHY

|         |       |       |       |       |       |       |       |       |       |       |       |       |       |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1925-26 | 13.89 | 14.06 | 14.98 | 15.11 | 15.38 | 15.87 | 15.82 | 15.79 | 15.59 | 15.81 | 16.31 | 16.64 | 15.35 |
| 1926-27 | 16.01 | 15.52 | 15.32 | 15.49 | 15.62 | 15.81 | 14.58 | 15.82 | 15.39 | 15.05 | 15.14 | 14.97 | 15.44 |
| 1927-28 | 13.29 | 12.03 | 11.70 | 11.68 | 11.67 | 11.31 | 11.34 | 11.03 | 11.14 | 11.17 | 11.75 | 11.82 | 12.20 |
| 1928-29 | 11.68 | 11.70 | 11.77 | 11.88 | 12.18 | 12.35 | 12.45 | 12.99 | 13.01 | 12.86 | 12.64 | 12.57 | 11.75 |
| 1929-30 | 11.91 | 11.61 | 11.60 | 11.67 | 11.70 | 11.57 | 11.55 | 11.55 | 11.57 | 11.79 | 12.04 | 12.29 | 11.72 |
| 1930-31 | 12.32 | 13.53 | 14.78 | 14.82 | 14.87 | 14.53 | 14.50 | 14.36 | 14.16 | 14.09 | 13.76 | 12.84 | 14.11 |
| 1931-32 | 10.77 | 10.07 | 9.79  | 9.66  | 9.34  | 9.14  | 8.86  | 8.26  | 8.36  | 8.14  | 8.23  | 7.73  | 9.17  |
| 1932-33 | 7.34  | 7.34  | 7.20  | 7.19  | 7.04  | 7.15  | 6.95  | 6.91  | 6.94  | 7.18  | 7.39  | 7.57  | 7.19  |
| 1933-34 | 7.82  | 8.39  | 8.50  | 8.60  | 8.72  | 8.52  | 8.76  | 9.15  | 9.46  | 9.91  | 10.32 | 11.16 | 8.98  |
| 1934-35 | 11.78 | 13.72 | 14.82 | 15.53 | 15.72 | 15.85 |       |       |       |       |       |       |       |

## PRAIRIE

|         |      |       |       |       |       |       |       |       |       |       |       |       |       |
|---------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1925-26 | 8.93 | 8.55  | 9.24  | 9.41  | 9.39  | 9.78  | 9.73  | 9.53  | 9.48  | 9.08  | 9.54  | 9.59  | 9.34  |
| 1926-27 | 9.63 | 10.55 | 10.52 | 10.78 | 10.76 | 10.98 | 11.28 | 11.78 | 11.50 | 10.70 | 11.51 | 10.77 | 10.85 |
| 1927-28 | 9.15 | 8.65  | 7.98  | 7.67  | 7.47  | 7.55  | 7.41  | 6.98  | 6.70  | 6.96  | 7.32  | 7.59  | 7.72  |
| 1928-29 | 7.80 | 7.34  | 7.62  | 7.71  | 7.72  | 7.88  | 8.01  | 8.33  | 8.99  | 8.81  | 8.76  | 8.77  | 8.04  |
| 1929-30 | 8.21 | 7.96  | 8.13  | 7.97  | 8.11  | 8.18  | 8.30  | 8.41  | 8.11  | 8.12  | 7.96  | 7.78  | 8.14  |
| 1930-31 | 7.12 | 7.63  | 7.89  | 7.66  | 7.48  | 7.31  | 7.23  | 6.82  | 6.51  | 6.44  | 6.30  | 6.34  | 7.26  |
| 1931-32 | 6.52 | 6.64  | 6.68  | 6.53  | 6.67  | 6.56  | 6.48  | 6.70  | 7.30  | 7.47  | 7.15  | 6.02  | 6.75  |
| 1932-33 | 5.14 | 4.71  | 4.57  | 4.45  | 4.36  | 4.06  | 4.10  | 4.01  | 3.97  | 4.07  | 4.31  | 4.30  | 4.49  |
| 1933-34 | 5.18 | 5.54  | 5.49  | 5.46  | 5.35  | 5.34  | 5.47  | 5.58  | 5.77  | 6.11  | 6.50  | 7.42  | 5.68  |
| 1934-35 | 7.90 | 11.03 | 11.61 | 11.86 | 12.09 | 12.49 |       |       |       |       |       |       |       |

<sup>1</sup> For "All hay" average for the year obtained by weighting State price averages for the crop-marketing season.

<sup>2</sup> Preliminary for "All hay" only.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; yearly price obtained by weighting monthly prices by monthly marketings. Data for earlier years in 1928 Yearbook, tables 287-291. Only monthly prices are comparable.

TABLE 292. *Hay, alfalfa No. 1: Average price per ton at Kansas City, 1925-26 to 1934-35*

| Year    | July        | Aug.        | Sept.       | Oct.        | Nov.        | Dec.        | Jan.        | Feb.        | Mar.        | Apr.        | May         | June        | Average     |
|---------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|         | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> |
| 1925-26 | 18.20       | 19.40       | 20.10       | 21.40       | 21.25       | 21.40       | 22.20       | 21.60       | 22.80       | 24.60       | 23.25       | 17.25       | 21.10       |
| 1926-27 | 17.80       | 18.25       | 19.40       | 19.90       | 20.70       | 20.40       | 20.00       | 19.25       | 18.75       | 19.00       | 19.00       | 15.00       | 19.00       |
| 1927-28 | 14.75       | 15.25       | 18.00       | 19.50       | 20.00       | 22.25       | 21.50       | 22.50       | 24.25       | 26.00       | 26.00       | 20.00       | 20.80       |
| 1928-29 | 20.00       | 20.50       | 21.00       | 23.25       | 25.00       | 26.00       | 28.25       | 28.75       | 29.75       | 29.25       | 26.00       | 19.50       | 24.80       |
| 1929-30 | 19.00       | 20.50       | 23.50       | 24.25       | 24.75       | 22.75       | 23.75       | 23.00       | 22.00       | 23.00       | 21.75       | 16.75       | 22.10       |
| 1930-31 | 17.50       | 21.50       | 22.00       | 22.25       | 23.25       | 22.50       | 21.50       | 19.50       | 19.75       | 19.25       | 17.25       | 12.75       | 19.90       |
| 1931-32 | 13.25       | 13.25       | 13.00       | 13.00       | 13.00       | 14.25       | 14.00       | 14.50       | 16.00       | 16.00       | 13.50       | 9.75        | 13.62       |
| 1932-33 | 9.75        | 9.75        | 9.75        | 10.50       | 10.50       | 11.00       | 10.50       | 10.25       | 10.75       | 11.00       | 11.20       | 9.65        | 10.38       |
| 1933-34 | 9.90        | 11.45       | 11.75       | 11.75       | 11.75       | 12.70       | 12.50       | 12.35       | 12.75       | 13.95       | 13.50       | 14.10       | 12.37       |
| 1934-35 | 17.60       | 22.50       | 25.50       | 21.70       | 21.50       |             |             |             |             |             |             |             |             |

Bureau of Agricultural Economics. Compiled from reports made directly to the Bureau by its representative in the market. Data for earlier years in 1923 Yearbook, table 292.

TABLE 293.—*Alfalfa meal: Production in the United States, 1927-28 to 1934-35, and price per ton of No. 1 medium, bagged, in car lots, Kansas City, 1925-26 to 1934-35*

| Year    | Production        |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   | Total or average  |
|---------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|         | June              | July              | Aug.              | Sept.             | Oct.              | Nov.              | Dec.              | Jan.              | Feb.              | Mar.              | Apr.              | May               |                   |
|         | <i>Short tons</i> | <i>Short tons</i> | <i>Short tons</i> | <i>Short tons</i> | <i>Short tons</i> | <i>Short tons</i> | <i>Short tons</i> | <i>Short tons</i> | <i>Short tons</i> | <i>Short tons</i> | <i>Short tons</i> | <i>Short tons</i> | <i>Short tons</i> |
| 1927-28 | 19,385            | 14,674            | 19,738            | 28,128            | 36,236            | 37,760            | 35,739            | 40,005            | 30,236            | 25,551            | 17,865            | 16,001            | 321,318           |
| 1928-29 | 26,492            | 26,707            | 38,716            | 42,925            | 40,427            | 33,132            | 31,908            | 51,250            | 36,993            | 27,893            | 14,633            | 9,866             | 380,942           |
| 1929-30 | 19,075            | 24,408            | 28,884            | 32,252            | 40,927            | 27,785            | 42,077            | 44,857            | 41,847            | 22,871            | 14,634            | 11,259            | 350,876           |
| 1930-31 | 31,165            | 24,680            | 30,570            | 41,974            | 25,959            | 28,921            | 21,957            | 34,375            | 16,564            | 14,217            | 13,383            | 12,955            | 301,750           |
| 1931-32 | 23,546            | 15,096            | 17,404            | 18,933            | 16,944            | 21,164            | 19,515            | 12,606            | 12,521            | 10,516            | 8,747             | 10,045            | 187,037           |
| 1932-33 | 14,803            | 17,008            | 15,446            | 19,145            | 13,117            | 12,388            | 12,933            | 10,963            | 10,119            | 10,097            | 12,245            | 15,969            | 169,203           |
| 1933-34 | 25,350            | 21,762            | 18,127            | 18,660            | 21,253            | 15,619            | 15,254            | 15,299            | 12,324            | 11,584            | 12,278            | 14,747            | 202,262           |
| 1934-35 | 24,594            | 21,814            | 20,592            | 18,481            | 16,148            | 14,131            | 13,948            |                   |                   |                   |                   |                   |                   |
| Year    | Price             |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |
|         | <i>Dol.</i>       | <i>Dol.</i>       | <i>Dol.</i>       | <i>Dol.</i>       | <i>Dol.</i>       | <i>Dol.</i>       | <i>Dol.</i>       | <i>Dol.</i>       | <i>Dol.</i>       | <i>Dol.</i>       | <i>Dol.</i>       | <i>Dol.</i>       |                   |
| 1925-26 | 22.90             | 23.00             | 24.00             | 24.25             | 24.40             | 24.10             | 24.40             | 24.80             | 24.00             | 23.10             | 23.90             | 25.40             | 24.02             |
| 1926-27 | 23.90             | 23.00             | 22.80             | 22.25             | 22.40             | 22.90             | 22.30             | 22.00             | 21.75             | 21.40             | 21.00             | 22.20             | 22.32             |
| 1927-28 | 21.60             | 21.75             | 22.40             | 23.40             | 23.10             | 22.75             | 23.30             | 24.40             | 26.25             | 29.40             | 33.50             | 34.25             | 25.51             |
| 1928-29 | 31.70             | 27.60             | 25.60             | 26.00             | 26.60             | 26.60             | 28.60             | 29.75             | 29.90             | 28.50             | 28.00             | 27.00             | 27.99             |
| 1929-30 | 25.10             | 23.50             | 25.00             | 27.30             | 27.50             | 26.80             | 27.40             | 27.40             | 25.50             | 23.60             | 25.00             | 23.80             | 25.66             |
| 1930-31 | 22.00             | 22.70             | 24.70             | 26.60             | 25.60             | 25.00             | 24.20             | 23.60             | 21.25             | 20.40             | 21.00             | 19.60             | 23.05             |
| 1931-32 | 18.10             | 17.90             | 18.80             | 17.60             | 17.20             | 18.00             | 18.60             | 18.90             | 17.60             | 17.00             | 17.00             | 17.00             | 17.72             |
| 1932-33 | 15.40             | 15.50             | 15.90             | 16.00             | 15.60             | 15.40             | 15.25             | 15.10             | 15.00             | 15.25             | 15.60             | 16.20             | 15.52             |
| 1933-34 | 16.00             | 17.30             | 18.20             | 19.40             | 19.10             | 19.00             | 19.00             | 19.20             | 19.00             | 19.00             | 19.00             | 19.10             | 18.61             |
| 1934-35 | 20.60             | 24.25             | 27.20             | 27.25             | 25.75             | 25.13             | 26.45             |                   |                   |                   |                   |                   |                   |

<sup>1</sup> Fine ground.

Bureau of Agricultural Economics.

Production data from reports of meal manufacturers to the Bureau through its market news service; prices are from reports of Bureau representatives in the market and are average of bulk of sales price for one day each week.

TABLE 294.—*Pasture: 1 Condition, 1st of month, by States, average 1922-31, and 1934*

| State and division  | May              |             | June             |             | July             |             | August           |             | September        |             | October          |             |
|---------------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|                     | Average, 1922-31 | 1934        | Average, 1922-31 | 1934        | Average, 1922-31 | 1934        | Average, 1922-31 | 1934        | Average, 1922-31 | 1934        | Average, 1922-31 | 1934        |
|                     | <i>Pct.</i>      | <i>Pct.</i> | <i>Pct.</i>      | <i>Pct.</i> | <i>Pct.</i>      | <i>Pct.</i> | <i>Pct.</i>      | <i>Pct.</i> | <i>Pct.</i>      | <i>Pct.</i> | <i>Pct.</i>      | <i>Pct.</i> |
| Maine.....          | 85               | 78          | 88               | 79          | 91               | 77          | 88               | 66          | 84               | 60          | 80               | 74          |
| New Hampshire.....  | 85               | 84          | 89               | 82          | 90               | 81          | 88               | 64          | 85               | 61          | 81               | 77          |
| Vermont.....        | 84               | 84          | 90               | 74          | 95               | 81          | 94               | 66          | 89               | 59          | 86               | 71          |
| Massachusetts.....  | 81               | 83          | 87               | 80          | 88               | 85          | 82               | 62          | 81               | 68          | 80               | 79          |
| Rhode Island.....   | 82               | 68          | 86               | 84          | 87               | 91          | 81               | 66          | 79               | 62          | 77               | 82          |
| Connecticut.....    | 80               | 86          | 86               | 90          | 88               | 94          | 80               | 67          | 78               | 73          | 79               | 80          |
| New York.....       | 78               | 66          | 84               | 55          | 88               | 63          | 83               | 48          | 77               | 49          | 77               | 72          |
| New Jersey.....     | 79               | 75          | 83               | 85          | 79               | 83          | 75               | 72          | 77               | 79          | 77               | 84          |
| Pennsylvania.....   | 78               | 72          | 84               | 70          | 83               | 65          | 78               | 56          | 75               | 76          | 74               | 83          |
| North Atlantic..... | 79.1             | 71.6        | 84.8             | 66.5        | 86.5             | 68.9        | 81.6             | 55.3        | 77.5             | 62.2        | 76.9             | 76.9        |
| Ohio.....           | 78               | 67          | 82               | 51          | 81               | 48          | 78               | 41          | 76               | 65          | 77               | 66          |
| Indiana.....        | 78               | 67          | 83               | 50          | 82               | 46          | 75               | 38          | 74               | 55          | 77               | 74          |
| Illinois.....       | 81               | 65          | 82               | 43          | 82               | 33          | 74               | 36          | 72               | 47          | 75               | 68          |
| Michigan.....       | 70               | 54          | 82               | 58          | 82               | 42          | 71               | 26          | 62               | 33          | 70               | 70          |
| Wisconsin.....      | 77               | 55          | 82               | 42          | 84               | 42          | 77               | 43          | 68               | 42          | 75               | 69          |
| Minnesota.....      | 77               | 44          | 78               | 26          | 80               | 38          | 71               | 36          | 65               | 33          | 70               | 44          |
| Iowa.....           | 83               | 56          | 80               | 28          | 83               | 25          | 75               | 39          | 76               | 39          | 81               | 56          |
| Missouri.....       | 83               | 62          | 83               | 48          | 84               | 33          | 75               | 12          | 75               | 18          | 76               | 48          |
| North Dakota.....   | 73               | 34          | 74               | 15          | 78               | 33          | 72               | 20          | 67               | 16          | 67               | 17          |
| South Dakota.....   | 78               | 29          | 76               | 8           | 77               | 27          | 68               | 19          | 63               | 14          | 65               | 18          |
| Nebraska.....       | 84               | 64          | 85               | 33          | 86               | 41          | 77               | 23          | 73               | 22          | 75               | 30          |
| Kansas.....         | 83               | 64          | 86               | 52          | 86               | 42          | 79               | 15          | 74               | 10          | 78               | 23          |
| North Central.....  | 79.8             | 57.7        | 81.9             | 39.3        | 82.7             | 37.0        | 75.0             | 29.7        | 71.7             | 33.8        | 75.2             | 49.8        |
| Delaware.....       | 78               | 72          | 80               | 86          | 73               | 84          | 69               | 70          | 73               | 84          | 69               | 94          |
| Maryland.....       | 75               | 70          | 78               | 83          | 74               | 80          | 69               | 49          | 71               | 73          | 71               | 84          |
| Virginia.....       | 78               | 67          | 81               | 72          | 79               | 72          | 75               | 67          | 79               | 90          | 74               | 90          |
| West Virginia.....  | 78               | 69          | 82               | 60          | 82               | 55          | 80               | 49          | 81               | 76          | 77               | 74          |
| North Carolina..... | 82               | 70          | 82               | 70          | 82               | 81          | 80               | 84          | 81               | 91          | 76               | 87          |
| South Carolina..... | 79               | 66          | 76               | 73          | 76               | 70          | 76               | 69          | 70               | 73          | 67               | 66          |
| Georgia.....        | 80               | 74          | 80               | 81          | 77               | 79          | 78               | 74          | 71               | 79          | 68               | 71          |
| Florida.....        | 80               | 77          | 79               | 82          | 84               | 83          | 88               | 82          | 87               | 84          | 85               | 82          |
| South Atlantic..... | 78.8             | 69.7        | 80.5             | 72.3        | 79.3             | 72.0        | 77.5             | 66.1        | 77.4             | 82.5        | 73.8             | 80.6        |
| Kentucky.....       | 81               | 66          | 83               | 59          | 84               | 66          | 78               | 64          | 76               | 82          | 75               | 78          |
| Tennessee.....      | 81               | 68          | 84               | 64          | 81               | 71          | 75               | 66          | 74               | 71          | 72               | 74          |
| Alabama.....        | 80               | 70          | 81               | 80          | 78               | 76          | 76               | 79          | 72               | 83          | 67               | 77          |
| Mississippi.....    | 81               | 74          | 83               | 72          | 80               | 75          | 76               | 69          | 74               | 71          | 69               | 68          |
| Arkansas.....       | 81               | 78          | 85               | 71          | 80               | 56          | 73               | 27          | 67               | 28          | 68               | 46          |
| Louisiana.....      | 81               | 77          | 84               | 83          | 81               | 72          | 75               | 65          | 73               | 63          | 72               | 63          |
| Oklahoma.....       | 82               | 70          | 86               | 65          | 83               | 46          | 74               | 17          | 65               | 17          | 67               | 42          |
| Texas.....          | 82               | 81          | 85               | 68          | 82               | 42          | 72               | 28          | 63               | 24          | 67               | 34          |
| South Central.....  | 81.6             | 75.2        | 84.4             | 67.8        | 81.7             | 53.5        | 73.8             | 40.5        | 67.5             | 41.3        | 68.6             | 49.7        |
| Montana.....        | 81               | 74          | 82               | 48          | 82               | 57          | 76               | 42          | 74               | 35          | 74               | 37          |
| Idaho.....          | 86               | 86          | 90               | 75          | 86               | 72          | 80               | 61          | 77               | 53          | 77               | 53          |
| Wyoming.....        | 88               | 84          | 93               | 48          | 93               | 53          | 87               | 36          | 87               | 39          | 86               | 45          |
| Colorado.....       | 85               | 70          | 87               | 59          | 84               | 46          | 80               | 33          | 81               | 35          | 78               | 35          |
| New Mexico.....     | 76               | 58          | 80               | 44          | 74               | 31          | 71               | 29          | 78               | 29          | 76               | 37          |
| Arizona.....        | 86               | 81          | 85               | 72          | 82               | 69          | 81               | 67          | 84               | 66          | 83               | 71          |
| Utah.....           | 86               | 63          | 89               | 42          | 82               | 41          | 77               | 33          | 77               | 27          | 77               | 33          |
| Nevada.....         | 84               | 79          | 88               | 65          | 84               | 62          | 82               | 54          | 78               | 36          | 79               | 48          |
| Washington.....     | 84               | 93          | 85               | 93          | 82               | 85          | 72               | 72          | 67               | 59          | 69               | 58          |
| Oregon.....         | 83               | 92          | 91               | 88          | 88               | 80          | 80               | 68          | 74               | 57          | 74               | 53          |
| California.....     | 82               | 75          | 81               | 67          | 78               | 68          | 76               | 57          | 75               | 56          | 74               | 53          |
| Western.....        | 83.3             | 76.8        | 84.7             | 61.5        | 82.1             | 57.9        | 77.6             | 48.1        | 77.0             | 44.6        | 75.9             | 45.8        |
| United States.....  | 80.6             | 66.2        | 83.0             | 53.2        | 82.5             | 48.9        | 76.0             | 39.6        | 72.6             | 43.1        | 74.0             | 54.0        |

<sup>1</sup> For range States, condition given as reported. Probably relates largely to farm pasture, i. e., range not included.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 295.—*Pasture and range: Condition, 1st of month, United States, 1925-34*

| Year      | Pasture |      |      |      |       |      | Range <sup>1</sup> |      |      |      |       |      |
|-----------|---------|------|------|------|-------|------|--------------------|------|------|------|-------|------|
|           | May     | June | July | Aug. | Sept. | Oct. | May                | June | July | Aug. | Sept. | Oct. |
|           | Pct.    | Pct. | Pct. | Pct. | Pct.  | Pct. | Pct.               | Pct. | Pct. | Pct. | Pct.  | Pct. |
| 1925----- | 82.2    | 75.7 | 73.0 | 69.5 | 67.4  | 72.9 | 84                 | 86   | 86   | 83   | 87    | 92   |
| 1926----- | 74.6    | 77.0 | 77.0 | 69.9 | 78.2  | 83.7 | 94                 | 95   | 92   | 87   | 84    | 83   |
| 1927----- | 87.0    | 88.3 | 92.8 | 86.9 | 84.2  | 80.1 | 89                 | 89   | 94   | 94   | 95    | 94   |
| 1928----- | 71.3    | 78.6 | 84.4 | 85.6 | 83.3  | 77.7 | 85                 | 90   | 91   | 90   | 87    | 85   |
| 1929----- | 86.9    | 87.2 | 87.5 | 79.7 | 67.1  | 70.2 | 84                 | 87   | 88   | 86   | 83    | 84   |
| 1930----- | 77.3    | 80.4 | 74.6 | 56.4 | 47.7  | 56.1 | 89                 | 92   | 88   | 82   | 81    | 82   |
| 1931----- | 78.8    | 78.5 | 73.0 | 63.7 | 63.0  | 63.5 | 84                 | 82   | 79   | 73   | 73    | 71   |
| 1932----- | 74.1    | 77.6 | 79.0 | 71.1 | 67.6  | 67.1 | 81                 | 89   | 92   | 88   | 84    | 84   |
| 1933----- | 71.5    | 81.5 | 60.5 | 55.6 | 59.5  | 65.6 | 76                 | 82   | 78   | 74   | 75    | 70   |
| 1934----- | 66.2    | 53.2 | 48.9 | 39.6 | 43.1  | 54.0 | 80                 | 70   | 66   | 55   | 54    | 55   |

<sup>1</sup> Western division and includes range areas of North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board. Condition of pasture for earlier years in 1928 Yearbook, table 296.

TABLE 296.—*Hops: Acreage, production, price per pound received by producers Dec. 1, foreign trade, and consumption, United States, 1910-11 to 1934-35*

| Year beginning July        | Acreage harvested | Average yield per acre | Production   | Price Dec. 1 | Foreign trade, year beginning July |                               |                          | Consumption by breweries <sup>3</sup> |
|----------------------------|-------------------|------------------------|--------------|--------------|------------------------------------|-------------------------------|--------------------------|---------------------------------------|
|                            |                   |                        |              |              | Imports <sup>1</sup>               | Domestic exports <sup>1</sup> | Net exports <sup>2</sup> |                                       |
|                            | Acres             | Pounds                 | 1,000 pounds | Cents        | 1,000 pounds                       | 1,000 pounds                  | 1,000 pounds             | 1,000 pounds                          |
| 1910-11-----               |                   |                        |              |              | 8,558                              | 13,105                        | 4,565                    | 45,069                                |
| 1911-12-----               |                   |                        |              |              | 2,901                              | 12,191                        | 9,235                    | 42,337                                |
| 1912-13-----               |                   |                        |              |              | 8,494                              | 17,691                        | 9,133                    | 44,238                                |
| 1913-14-----               |                   |                        |              |              | 5,382                              | 24,263                        | 18,911                   | 43,988                                |
| 1914-15-----               |                   |                        |              |              | 11,651                             | 16,210                        | 4,576                    | 38,839                                |
| 1915-16-----               | 44,653            | 1,187                  | 52,959       | 11.7         | 676                                | 22,410                        | 21,869                   | 37,452                                |
| 1916-17-----               | 43,900            | 1,152                  | 50,595       | 12.0         | 237                                | 4,875                         | 4,664                    | 41,950                                |
| 1917-18-----               | 29,900            | 983                    | 29,389       | 33.3         | 121                                | 3,495                         | 3,411                    | 33,481                                |
| 1918-19-----               | 25,900            | 829                    | 21,481       | 19.3         | (*)                                | 7,467                         | 7,472                    | 13,925                                |
| 1919-20-----               | 22,000            | 1,287                  | 28,320       | 77.4         | 2,696                              | 30,780                        | 28,187                   | 6,441                                 |
| 1920-21-----               | 27,000            | 1,243                  | 33,555       | 35.7         | 4,808                              | 22,206                        | 18,226                   | 9,989                                 |
| 1921-22-----               | 27,000            | 1,087                  | 29,340       | 24.1         | 893                                | 19,522                        | 19,110                   | 4,453                                 |
| 1922-23-----               | 23,400            | 1,186                  | 27,744       | 8.0          | 1,283                              | 13,487                        | 12,401                   | 4,566                                 |
| 1923-24-----               | 18,440            | 1,071                  | 19,751       | 18.8         | 761                                | 20,461                        | 19,832                   | 3,815                                 |
| 1924-25-----               | 20,350            | 1,360                  | 27,670       | 10.3         | 439                                | 10,122                        | 15,737                   | 3,256                                 |
| 1925-26-----               | 20,350            | 1,404                  | 28,573       | 21.8         | 581                                | 14,998                        | 14,692                   | 3,426                                 |
| 1926-27-----               | 20,800            | 1,516                  | 31,522       | 23.1         | 470                                | 13,360                        | 12,936                   | 3,149                                 |
| 1927-28-----               | 24,600            | 1,246                  | 30,653       | 22.9         | 753                                | 11,812                        | 11,087                   | 3,071                                 |
| 1928-29-----               | 26,200            | 1,257                  | 32,944       | 19.3         | 649                                | 8,836                         | 8,198                    | 2,735                                 |
| 1929-30-----               | 24,400            | 1,360                  | 33,195       | 11.4         | 926                                | 6,793                         | 5,901                    | 2,627                                 |
| 1930-31-----               | 19,500            | 1,202                  | 23,447       | 14.8         | 1,026                              | 5,593                         | 4,563                    | 2,197                                 |
| 1931-32-----               | 21,400            | 1,234                  | 26,410       | 13.8         | 1,253                              | 3,817                         | 2,564                    | 1,941                                 |
| 1932-33-----               | 22,000            | 1,094                  | 24,058       | 17.5         | 4,672                              | 2,431                         | 7,241                    | 7,767                                 |
| 1933-34-----               | 30,300            | 1,319                  | 39,965       | 30.4         | 5,535                              | 7,588                         | 2,053                    | 26,234                                |
| 1934-35 <sup>4</sup> ----- | 35,800            | 1,127                  | 40,345       | 11.3         |                                    |                               |                          |                                       |

<sup>1</sup> Compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1910-26; January and June issues, 1927-34, and official records of the Bureau of Foreign and Domestic Commerce.

<sup>2</sup> Total exports (domestic plus foreign) minus total imports; beginning 1933-34 domestic exports minus imports for consumption. (See introductory text.)

<sup>3</sup> 1920-21 to 1931-32 represent hops used to make cereal beverages containing less than 0.5 percent of alcohol by volume; 1932-33 includes 867,057 pounds of hops used to make cereal beverages containing less than 0.5 percent of alcohol by volume and 6,900,263 pounds fermented malt liquor containing not more than 3.2 percent of alcohol by weight; 1933-34 materials used for fermented liquor.

<sup>4</sup> Not over 600 pounds.

<sup>5</sup> Not including 57,936 pounds in 1924, 71,508 pounds in 1925, 960 pounds in 1926, and 6,294 pounds in 1927 used in the manufacture of distilled spirits.

<sup>6</sup> Average price, crop marketing season.

<sup>7</sup> Net imports.

<sup>8</sup> Preliminary.

Bureau of Agricultural Economics; compiled from reports of the Division of Crop and Livestock Estimates, Bureau of Foreign and Domestic Commerce, records of the Bureau of Internal Revenue, 1910-11 to 1925-26; annual reports of the Commissioner of Prohibition, 1926-27 to 1929-30; and Commissioner of Industrial Alcohol, 1930-31 to date.

TABLE 297.—*Hops: Acreage, yield, production, and average price per pound received by producers, by States, averages, and annual 1933 and 1934*

| State              | Acreage harvested |              |                   | Yield per acre  |            |                   | Production       |                  |                   | Price for crop of— |                   |
|--------------------|-------------------|--------------|-------------------|-----------------|------------|-------------------|------------------|------------------|-------------------|--------------------|-------------------|
|                    | Average 1927-31   | 1933         | 1934 <sup>1</sup> | Average 1922-31 | 1933       | 1934 <sup>1</sup> | Average 1927-31  | 1933             | 1934 <sup>1</sup> | 1933               | 1934 <sup>1</sup> |
|                    | <i>Acres</i>      | <i>Acres</i> | <i>Acres</i>      | <i>Lb.</i>      | <i>Lb.</i> | <i>Lb.</i>        | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i>  | <i>Cents</i>       | <i>Cents</i>      |
| Washington.....    | 2,620             | 4,900        | 6,300             | 1,890           | 1,600      | 1,650             | 4,783            | 7,840            | 10,395            | 32.0               | 14.0              |
| Oregon.....        | 15,900            | 19,000       | 22,000            | 1,037           | 1,135      | 850               | 16,537           | 21,565           | 18,700            | 30.0               | 15.0              |
| California.....    | 4,700             | 6,400        | 7,500             | 1,650           | 1,650      | 1,500             | 8,010            | 10,560           | 11,250            | 30.0               | 13.5              |
| United States..... | 23,220            | 30,300       | 35,800            | 1,284           | 1,319      | 1,127             | 29,331           | 39,965           | 40,345            | 30.4               | 14.3              |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 298.—*Hops: Acreage, yield per acre, and production in specified countries, 1932-33 to 1934-35*

| Country   | Acreage      |              |                      | Yield per acre |               |                      | Production          |                     |                      |
|---|--------------|--------------|----------------------|----------------|---------------|----------------------|---------------------|---------------------|----------------------|
|   | 1932-33      | 1933-34      | 1934-35 <sup>1</sup> | 1932-33        | 1933-34       | 1934-35 <sup>1</sup> | 1932-33             | 1933-34             | 1934-35 <sup>1</sup> |
| NORTH AMERICA   | <i>Acres</i> | <i>Acres</i> | <i>Acres</i>         | <i>Pounds</i>  | <i>Pounds</i> | <i>Pounds</i>        | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i>  |
| Canada <sup>2</sup> .....   | 630          | 984          | .....                | 1,146          | 1,501         | .....                | 791                 | 1,477               | .....                |
| United States <sup>3</sup> .....  | 22,000       | 30,300       | 35,800               | 1,094          | 1,319         | 1,127                | 24,058              | 39,965              | 40,345               |
| EUROPE  |              |              |                      |                |               |                      |                     |                     |                      |
| England and Wales.....  | 16,531       | 16,895       | 17,800               | 1,274          | 1,432         | 1,630                | 21,056              | 24,192              | 29,008               |
| Belgium.....  | 1,416        | 1,475        | 2,170                | 1,081          | 1,071         | 1,784                | 1,531               | 1,580               | 3,871                |
| France.....   | 4,361        | 4,220        | 5,004                | 392            | 753           | 1,204                | 1,711               | 3,178               | 6,026                |
| Germany.....  | 19,800       | 23,638       | 23,850               | 552            | 634           | 605                  | 10,928              | 14,977              | 14,427               |
| Austria.....  | 116          | 96           | .....                | 302            | .....         | .....                | 35                  | .....               | .....                |
| Czechoslovakia.....   | 23,631       | 25,370       | 27,000               | 703            | 509           | 573                  | 16,583              | 12,915              | 15,478               |
| Hungary.....  | 243          | 358          | .....                | 580            | 547           | .....                | 141                 | 196                 | .....                |
| Yugoslavia.....   | 3,613        | 4,186        | .....                | 503            | 771           | .....                | 1,819               | 3,228               | .....                |
| Rumania.....  | 72           | 52           | .....                | 458            | 404           | .....                | 33                  | 21                  | .....                |
| Poland.....   | 4,875        | 5,424        | 7,000                | 705            | 468           | .....                | 3,436               | 2,541               | .....                |
| Total European countries reporting acreage and production, all years.....               | 65,739       | 71,598       | 75,824               | 788            | 794           | 907                  | 51,809              | 56,842              | 68,810               |
| OCEANIA   |              |              |                      |                |               |                      |                     |                     |                      |
| Australia.....  | 952          | 726          | .....                | 1,277          | 1,338         | .....                | 1,669               | 1,654               | .....                |
| New Zealand.....  | 355          | 610          | .....                |                |               |                      |                     |                     |                      |
| Total countries reporting acreage and production, all years.....                        | 87,739       | 101,898      | 111,624              | 865            | 950           | 978                  | 75,867              | 96,807              | 109,155              |
| Estimated world total, excluding Union of Soviet Socialist Republics <sup>4</sup> ..... | 98,655       | 114,000      | 124,000              | 849            | 930           | 968                  | 83,792              | 106,000             | 120,000              |

<sup>1</sup> Preliminary.<sup>2</sup> British Columbia.<sup>3</sup> Principal producing States.<sup>4</sup> These figures include the acreage left unpicked, which was estimated at 200 acres in 1932, and 20 acres in 1933.<sup>5</sup> Yield based on acreage picked.<sup>6</sup> Exclusive of acreage and production in minor producing countries for which no data are available.

Bureau of Agricultural Economics; official sources and International Institute of Agriculture except as otherwise stated.

Acreage and production figures are for the harvesting season 1932 to 1934 in the Northern Hemisphere and 1932-33 to 1934-35 in the Southern Hemisphere.



TABLE 299.—Hops: *International trade, average 1925-29, annual 1930-33*

| Country                                  | Calendar year    |                  |                  |                  |                  |                  |                  |                  |                   |                  |
|--|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|------------------|
|  | Average 1925-29  |                  | 1930             |                  | 1931             |                  | 1932             |                  | 1933 <sup>1</sup> |                  |
|  | Ex-ports         | Im-ports         | Ex-ports         | Im-ports         | Ex-ports         | Im-ports         | Ex-ports         | Im-ports         | Ex-ports          | Im-ports         |
| <b>PRINCIPAL EXPORTING COUNTRIES</b>     | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i>  | <i>1,000 lb.</i> |
| Czechoslovakia.....                      | 15,936           | 1,228            | 19,890           | 11               | 23,271           | 0                | 12,312           | 0                | 11,014            | 0                |
| United States.....                       | 12,654           | 612              | 7,640            | 1,099            | 3,797            | 1,077            | 3,007            | 1,300            | 6,727             | 5,938            |
| Yugoslavia.....                          | 9,427            | 231              | 5,966            | 167              | 3,476            | 185              | 3,643            | 54               | 3,105             | 5                |
| France.....                              | 5,601            | 4,458            | 2,670            | 4,516            | 3,52             | 8,409            | 84               | 3,540            | 2,624             | 3,499            |
| Poland.....                              | 3,552            | 447              | 4,569            | 475              | 2,573            | 148              | 4,133            | 11               | 2,640             | 15               |
| New Zealand.....                         | 387              | 6                | 204              | 1                | 90               | 0                | 200              | 1                | 592               | 1                |
| Union of Soviet Socialist Republics..... | <sup>2</sup> 346 | <sup>2</sup> 126 | 9                | 7                | 13               | 0                | 46               | 0                | 216               | 0                |
| Australia <sup>2</sup> .....             | 269              | 208              | 152              | 124              | 1,001            | 35               | 32               | 28               | -----             | -----            |
| <b>Total.....</b>                        | <b>48,172</b>    | <b>7,316</b>     | <b>41,100</b>    | <b>6,400</b>     | <b>34,573</b>    | <b>9,854</b>     | <b>23,457</b>    | <b>4,934</b>     | <b>24,918</b>     | <b>9,458</b>     |
| <b>PRINCIPAL IMPORTING COUNTRIES</b>     |                  |                  |                  |                  |                  |                  |                  |                  |                   |                  |
| Germany.....                             | 2,964            | 11,408           | 5,721            | 6,190            | 9,743            | 3,879            | 4,657            | 3,827            | 7,481             | 4,680            |
| United Kingdom.....                      | 4,672            | 7,855            | 2,498            | 4,980            | 2,507            | 5,636            | 2,168            | 1,675            | 2,103             | 5,021            |
| Irish Free State.....                    | 0                | 5,997            | 0                | 5,793            | 0                | 6,392            | 0                | 4,553            | 0                 | 4,121            |
| Belgium.....                             | 2,173            | 5,300            | 370              | 7,207            | 266              | 8,701            | 382              | 5,003            | 942               | 3,951            |
| Austria.....                             | 117              | 3,082            | 37               | 3,074            | 30               | 2,527            | 19               | 1,551            | 15                | 696              |
| Canada.....                              | 387              | 2,574            | 216              | 3,386            | 125              | 589              | 15               | 751              | 773               | 675              |
| Netherlands.....                         | 89               | 1,273            | 24               | 1,479            | 27               | 1,237            | 36               | 677              | 13                | 493              |
| Brazil.....                              | 0                | 1,101            | 0                | 913              | 0                | 706              | 0                | 642              | 0                 | 323              |
| Switzerland.....                         | 0                | 1,097            | 0                | 1,263            | 0                | 1,234            | 0                | 975              | 2                 | 779              |
| Sweden.....                              | 1                | 1,081            | 1                | 1,281            | 0                | 1,170            | 1                | 1,080            | 0                 | 524              |
| Argentina.....                           | 0                | 1,051            | 0                | 1,224            | 0                | 653              | 0                | 46               | 0                 | 416              |
| Japan.....                               | 0                | 908              | 0                | 1,158            | 0                | 696              | 0                | 944              | 0                 | 914              |
| Denmark.....                             | 1                | 814              | 1                | 1,212            | 2                | 1,155            | 2                | 696              | 1                 | 496              |
| Italy.....                               | 8                | 672              | 5                | 586              | 5                | 315              | 2                | 170              | 24                | 185              |
| Union of South Africa.....               | 0                | 530              | 0                | 513              | 0                | 305              | 0                | 252              | 0                 | 310              |
| Norway.....                              | 0                | 334              | 0                | 261              | 0                | 305              | 0                | 251              | 0                 | 219              |
| Hungary.....                             | 121              | 310              | 85               | 135              | 39               | 0                | 56               | 42               | 07                | 64               |
| British India.....                       | 0                | 166              | 0                | 114              | 0                | 107              | 0                | 133              | 0                 | 84               |
| <b>Total.....</b>                        | <b>10,533</b>    | <b>45,553</b>    | <b>8,958</b>     | <b>40,739</b>    | <b>12,734</b>    | <b>35,907</b>    | <b>7,328</b>     | <b>23,237</b>    | <b>11,421</b>     | <b>24,441</b>    |

<sup>1</sup> Preliminary.<sup>2</sup> International Yearbook of Agricultural Statistics.

Bureau of Agricultural Economics; official sources except where otherwise noted. Lupulin and hopfenmehl (hop meal) are not included when given separately.

TABLE 300.—*Peanuts: Acreage, yield, production, and weighted average price per pound received by producers, United States, 1919-34*

| Year                    | Peanuts gathered   |                |                         |                    | Peanuts, all <sup>2</sup> |                |                     |
|-------------------------|--------------------|----------------|-------------------------|--------------------|---------------------------|----------------|---------------------|
|                         | Acreage            | Yield per acre | Total quantity gathered | Price <sup>1</sup> | Total acreage             | Yield per acre | Total production    |
|                         | <i>1,000 acres</i> | <i>Pounds</i>  | <i>1,000 pounds</i>     | <i>Cents</i>       | <i>1,000 acres</i>        | <i>Pounds</i>  | <i>1,000 pounds</i> |
| 1919.....               | 1,132              | 691.9          | 783,273                 | 9.33               | -----                     | -----          | -----               |
| 1920.....               | 1,181              | 712.5          | 841,474                 | 5.26               | -----                     | -----          | -----               |
| 1921.....               | 1,214              | 683.1          | 829,307                 | 3.99               | -----                     | -----          | -----               |
| 1922.....               | 1,005              | 630.0          | 633,114                 | 4.68               | -----                     | -----          | -----               |
| 1923.....               | 896                | 722.9          | 647,762                 | 6.78               | -----                     | -----          | -----               |
| 1924.....               | 1,187              | 627.7          | 745,059                 | <sup>2</sup> 5.68  | 1,830                     | 615.3          | 1,125,932           |
| 1925.....               | 958                | 729.1          | 698,475                 | <sup>2</sup> 4.56  | 1,593                     | 666.4          | 1,041,514           |
| 1926.....               | 843                | 749.5          | 631,825                 | <sup>2</sup> 4.97  | 1,315                     | 669.1          | 879,923             |
| 1927.....               | 1,142              | 767.0          | 864,549                 | <sup>2</sup> 5.04  | 1,786                     | 735.0          | 1,312,643           |
| 1928.....               | 1,211              | 706.1          | 855,066                 | <sup>2</sup> 4.90  | 1,930                     | 661.2          | 1,276,078           |
| 1929.....               | 1,360              | 703.3          | 956,448                 | <sup>2</sup> 3.93  | 2,001                     | 670.4          | 1,341,416           |
| 1930.....               | 1,133              | 689.4          | 747,085                 | <sup>2</sup> 3.54  | 1,862                     | 652.0          | 1,176,700           |
| 1931.....               | 1,419              | 773.7          | 1,097,930               | <sup>2</sup> 2.09  | 2,145                     | 724.4          | 1,553,840           |
| 1932.....               | 1,607              | 645.8          | 1,037,840               | <sup>2</sup> 1.53  | 2,425                     | 594.1          | 1,440,720           |
| 1933.....               | 1,345              | 673.4          | 905,710                 | <sup>2</sup> 2.80  | 2,077                     | 638.2          | 1,325,405           |
| 1934 <sup>4</sup> ..... | 1,571              | 676.7          | 1,063,035               | <sup>2</sup> 3.23  | 2,279                     | 643.2          | 1,465,870           |

<sup>1</sup> From 1919 to 1923, Nov. 15 price.<sup>2</sup> Includes peanuts planted in corn and peanuts grazed or hogged off.<sup>3</sup> Average of State prices weighted by total production.<sup>4</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

See 1930 Yearbook, table 327, for data for earlier years.

TABLE 301.—*Peanuts: Acreage, yield, production, and weighted average price per pound received by producers, by States, averages, and annual 1933 and 1934*<sup>1</sup>

| State               | Acreage             |                |                   | Yield per acre      |        |                   | Total quantity gathered |                 |                   |
|---------------------|---------------------|----------------|-------------------|---------------------|--------|-------------------|-------------------------|-----------------|-------------------|
|                     | Average,<br>1927-31 | 1933           | 1934 <sup>1</sup> | Average,<br>1922-31 | 1933   | 1934 <sup>1</sup> | Average,<br>1927-31     | 1933            | 1934 <sup>1</sup> |
|                     | 1,000<br>acres      | 1,000<br>acres | 1,000<br>acres    | Pounds              | Pounds | Pounds            | 1,000<br>pounds         | 1,000<br>pounds | 1,000<br>pounds   |
| Virginia.....       | 149                 | 117            | 145               | 892                 | 950    | 1,000             | 139,489                 | 111,150         | 146,000           |
| North Carolina..... | 226                 | 192            | 240               | 1,010               | 950    | 1,100             | 231,181                 | 182,400         | 264,000           |
| South Carolina..... | 11                  | 14             | 15                | 686                 | 680    | 640               | 8,055                   | 9,520           | 9,600             |
| Georgia.....        | 358                 | 431            | 496               | 596                 | 590    | 600               | 230,250                 | 254,290         | 297,600           |
| Florida.....        | 49                  | 54             | 65                | 617                 | 520    | 580               | 29,184                  | 28,080          | 37,700            |
| Tennessee.....      | 15                  | 10             | 11                | 785                 | 780    | 770               | 11,402                  | 7,800           | 8,470             |
| Alabama.....        | 230                 | 262            | 314               | 564                 | 565    | 600               | 137,830                 | 148,030         | 188,400           |
| Mississippi.....    | 13                  | 27             | 30                | 614                 | 600    | 660               | 8,249                   | 16,200          | 19,800            |
| Arkansas.....       | 13                  | 25             | 29                | 612                 | 530    | 475               | 8,050                   | 13,250          | 13,775            |
| Louisiana.....      | 12                  | 15             | 17                | 523                 | 650    | 520               | 6,175                   | 9,750           | 8,840             |
| Oklahoma.....       | 87                  | 31             | 50                | 656                 | 700    | 350               | 22,886                  | 21,700          | 17,500            |
| Texas.....          | 138                 | 167            | 158               | 539                 | 620    | 325               | 71,470                  | 103,540         | 51,850            |
| United States.....  | 1,253               | 1,345          | 1,571             | 705.9               | 678.4  | 676.7             | 904,222                 | 905,710         | 1,063,035         |

Peanuts produced<sup>2</sup>

| State               | Acreage             |                |                | Production          |                 |                   | Price of nuts gathered for crop of— |                   |
|---------------------|---------------------|----------------|----------------|---------------------|-----------------|-------------------|-------------------------------------|-------------------|
|                     | Average,<br>1927-31 | 1933           | 1934           | Average,<br>1927-31 | 1933            | 1934 <sup>1</sup> | 1933                                | 1934 <sup>1</sup> |
|                     | 1,000<br>acres      | 1,000<br>acres | 1,000<br>acres | 1,000<br>pounds     | 1,000<br>pounds | 1,000<br>pounds   | Cents                               | Cents             |
| Virginia.....       | 152                 | 118            | 147            | 141,462             | 112,100         | 147,000           | 2.8                                 | 3.3               |
| North Carolina..... | 242                 | 199            | 248            | 247,536             | 189,050         | 272,800           | 2.9                                 | 3.4               |
| South Carolina..... | 10                  | 18             | 20             | 11,449              | 12,240          | 12,800            | 3.7                                 | 4.8               |
| Georgia.....        | 624                 | 773            | 779            | 401,696             | 456,070         | 467,400           | 2.8                                 | 3.2               |
| Florida.....        | 228                 | 252            | 245            | 134,466             | 131,040         | 142,100           | 2.5                                 | 2.9               |
| Tennessee.....      | 15                  | 10             | 11             | 11,572              | 7,800           | 8,470             | 2.5                                 | 3.6               |
| Alabama.....        | 367                 | 377            | 443            | 219,486             | 215,005         | 265,800           | 2.6                                 | 3.0               |
| Mississippi.....    | 17                  | 33             | 36             | 10,837              | 19,800          | 23,760            | 4.0                                 | 4.4               |
| Arkansas.....       | 26                  | 35             | 41             | 16,388              | 18,550          | 19,475            | 3.5                                 | 4.1               |
| Louisiana.....      | 16                  | 20             | 22             | 8,327               | 13,000          | 11,440            | 4.4                                 | 4.3               |
| Oklahoma.....       | 51                  | 35             | 62             | 30,967              | 24,500          | 21,700            | 2.7                                 | 3.8               |
| Texas.....          | 190                 | 207            | 225            | 97,960              | 128,340         | 73,125            | 2.8                                 | 3.0               |
| United States.....  | 1,945               | 2,077          | 2,279          | 1,332,135           | 1,325,495       | 1,465,870         | 2.80                                | 3.23              |

<sup>1</sup> Preliminary.<sup>2</sup> Includes peanuts planted in corn and peanuts grazed or hogged off.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 302.—*Peanuts: Average price per pound, in the shell, received by producers, United States, 1925-26 to 1934-35*

| Year         | Sept.<br>15 | Oct.<br>15 | Nov.<br>15 | Dec.<br>15 | Jan.<br>15 | Feb.<br>15 | Mar.<br>15 | Apr.<br>15 | May<br>15 | June<br>15 | July<br>15 | Aug.<br>15 | Weighted<br>average |
|--------------|-------------|------------|------------|------------|------------|------------|------------|------------|-----------|------------|------------|------------|---------------------|
|              | Cents       | Cents      | Cents      | Cents      | Cents      | Cents      | Cents      | Cents      | Cents     | Cents      | Cents      | Cents      | Cents               |
| 1925-26..... | 5.7         | 4.7        | 5.1        | 4.4        | 4.5        | 4.7        | 4.6        | 5.1        | 5.0       | 4.7        | 5.3        | 5.3        | 4.6                 |
| 1926-27..... | 5.1         | 4.9        | 4.6        | 4.7        | 4.9        | 5.4        | 5.6        | 5.7        | 5.9       | 6.6        | 6.4        | 6.4        | 5.0                 |
| 1927-28..... | 6.0         | 4.9        | 4.6        | 5.2        | 5.4        | 5.4        | 5.4        | 5.5        | 5.7       | 5.6        | 5.5        | 5.5        | 5.0                 |
| 1928-29..... | 5.0         | 4.6        | 4.8        | 5.1        | 5.0        | 5.1        | 5.1        | 5.2        | 5.0       | 5.1        | 4.9        | 4.7        | 4.9                 |
| 1929-30..... | 4.6         | 4.4        | 4.0        | 3.8        | 3.7        | 3.5        | 3.5        | 3.5        | 3.7       | 3.6        | 3.7        | 3.8        | 3.8                 |
| 1930-31..... | 3.9         | 4.2        | 3.8        | 3.2        | 3.2        | 3.6        | 3.7        | 3.9        | 4.1       | 3.9        | 3.8        | 3.6        | 3.5                 |
| 1931-32..... | 3.1         | 2.3        | 2.2        | 2.0        | 2.0        | 1.9        | 2.0        | 1.9        | 1.7       | 1.6        | 1.4        | 1.7        | 2.1                 |
| 1932-33..... | 2.0         | 1.6        | 1.6        | 1.2        | 1.3        | 1.3        | 1.5        | 1.5        | 2.1       | 2.3        | 2.5        | 2.6        | 1.6                 |
| 1933-34..... | 2.5         | 2.5        | 2.7        | 2.6        | 2.9        | 3.1        | 3.2        | 3.4        | 3.4       | 3.3        | 3.2        | 3.3        | 2.8                 |
| 1934-35..... | 3.3         | 3.2        | 3.1        | 3.3        | -----      | -----      | -----      | -----      | -----     | -----      | -----      | -----      | 18.2                |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the marketing season. Data for earlier years in 1928 Yearbook, table 303. Only monthly prices are comparable.

TABLE 303.—*Peanuts: Average price per pound to growers, f. o. b. country shipping point basts, by months, 1924-25 to 1933-34*

## VIRGINIA-TYPE BUNCH

| Year    | Oct.  | Nov.  | Dec.  | Jan.  | Feb.  | Mar.  | Apr.  | May   | June  | July  | Aug.  | Sept. |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|         | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents |
| 1924-25 | 6½    | 6½    | 5½    | 5½    | 6½    | 6½    | 6½    | 6¼    | 6½    | 5½    | 5½    | 4½    |
| 1925-26 | 4¾    | 4     | 3¾    | 4½    | 4½    | 4½    | 4½    | 4½    | 4½    | 5     | 5½    | 4¾    |
| 1926-27 | 4¾    | 4     | 4     | 4½    | 4½    | 4½    | 4½    | 4½    | 4½    | 5     | 5½    | 5½    |
| 1927-28 | 4½    | 4½    | 5½    | 5½    | 5½    | 5½    | 5½    | 5½    | 5½    | 5½    | 5½    | 4½    |
| 1928-29 | 3½    | 4½    | 4½    | 5½    | 5½    | 5     | 4½    | 4½    | 4½    | 4½    | 4½    | 4½    |
| 1929-30 | 4½    | 3¾    | 3½    | 3½    | 3     | 2½    | 2½    | 3     | 3½    | 3½    | 3½    | 4½    |
| 1930-31 | 3½    | 3½    | 3     | 3½    | 3½    | 3½    | 3½    | 3½    | 4     | 4     | 3¾    | 3½    |
| 1931-32 | 2¼    | 1½    | 1¾    | 1½    | 1½    | 1½    | 1½    | 1½    | 1¼    | 1¼    | 1½    | 1½    |
| 1932-33 | 1½    | 1½    | 1     | 1     | 1     | 1     | 1½    | 1½    | 1½    | 2½    | 2½    | 2½    |
| 1933-34 | 2¼    | 2½    | 2½    | 2½    | 3     | 3¼    | 3¼    | 3¼    | 3¼    | 3¼    | 3½    | 3½    |

## SOUTHEASTERN RUNNERS

| 1924-25 | 3.5   | 3.6 | 3.2   | 3.2   | 3.6   | 3.5   | 3.2   | 3.0   | 3.3   | 3.5   | 3.2   | ----- |
|---------|-------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1925-26 | 3.0   | 3.0 | 2.9   | 3.3   | 3.8   | 3.8   | 3.5   | ----- | ----- | ----- | ----- | ----- |
| 1926-27 | ----- | 4.2 | 4.1   | 4.8   | 5.4   | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| 1927-28 | 2.8   | 3.0 | 3.6   | 3.7   | 3.5   | 3.6   | ----- | ----- | ----- | ----- | ----- | ----- |
| 1928-29 | ----- | 3.5 | 3.8   | 3.6   | 3.7   | 3.2   | ----- | 2.6   | ----- | ----- | ----- | ----- |
| 1929-30 | 2.2   | 2.2 | 2.0   | 2.0   | 2.0   | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| 1930-31 | 2.3   | 2.2 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| 1931-32 | 1.0   | 1.1 | 1.0   | .8    | .8    | 1.0   | .9    | .8    | .6    | .8    | ----- | ----- |
| 1932-33 | 1.0   | .8  | .6    | .9    | .9    | 1.0   | 1.1   | 1.6   | 1.8   | ----- | ----- | ----- |
| 1933-34 | 2.1   | 2.1 | 2.1   | 2.4   | 2.5   | 2.6   | 2.5   | 2.5   | 2.5   | 2.5   | 2.5   | ----- |

## SOUTHEASTERN SPANISH

| 1924-25 | 4.4 | 4.4 | 4.4 | 4.4 | 4.6 | 4.4 | 4.2 | 4.0 | 3.8 | 3.8 | 3.6 | 4.0 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1925-26 | 3.6 | 3.6 | 3.4 | 4.0 | 4.9 | 4.8 | 4.7 | 4.6 | 5.2 | 5.3 | 5.5 | 5.2 |
| 1926-27 | 4.6 | 5.2 | 5.4 | 5.9 | 6.6 | 6.8 | 6.7 | 6.2 | 5.8 | 5.8 | 4.0 | 3.6 |
| 1927-28 | 3.6 | 3.9 | 4.6 | 4.6 | 4.3 | 4.1 | 4.0 | 3.8 | 4.0 | 3.6 | 3.4 | 3.6 |
| 1928-29 | 3.6 | 4.3 | 4.4 | 4.4 | 4.2 | 3.8 | 3.6 | 3.6 | 3.5 | 3.2 | 3.2 | 3.4 |
| 1929-30 | 3.2 | 3.2 | 3.0 | 2.6 | 2.8 | 3.1 | 2.9 | 2.8 | 2.8 | 3.0 | 3.2 | 3.6 |
| 1930-31 | 3.2 | 3.1 | 2.8 | 3.0 | 3.4 | 3.4 | 3.6 | 3.6 | 3.5 | 3.2 | 2.8 | 1.5 |
| 1931-32 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.4 | 1.2 | 1.0 | .8  | .8  | 1.3 | 1.4 |
| 1932-33 | 1.2 | 1.1 | .9  | 1.1 | 1.1 | 1.2 | 1.4 | 2.1 | 2.4 | 2.7 | 2.7 | 2.2 |
| 1933-34 | 2.4 | 2.5 | 2.5 | 2.8 | 2.7 | 2.8 | 2.6 | 2.6 | 2.7 | 2.7 | 2.7 | 2.8 |

## SOUTHWESTERN SPANISH

| 1924-25 | 4.2 | 4.3 | 4.5 | 4.2   | 4.5 | 4.5   | ----- | ----- | ----- | ----- | ----- | 5.0 |
|---------|-----|-----|-----|-------|-----|-------|-------|-------|-------|-------|-------|-----|
| 1925-26 | 3.3 | 3.4 | 3.3 | 3.8   | 4.2 | 4.3   | ----- | ----- | ----- | ----- | ----- | 3.3 |
| 1926-27 | 4.3 | 4.4 | 4.6 | 5.2   | 5.7 | 5.7   | 5.8   | ----- | ----- | ----- | 4.0   | 3.3 |
| 1927-28 | 3.2 | 3.3 | 4.0 | 4.5   | 4.0 | 3.9   | 3.9   | 3.9   | ----- | ----- | ----- | 3.3 |
| 1928-29 | 3.3 | 3.3 | 3.5 | 3.7   | 3.6 | ----- | ----- | ----- | 3.7   | ----- | ----- | 3.5 |
| 1929-30 | 3.1 | 2.8 | 2.5 | 2.2   | 2.3 | 2.2   | 2.1   | 2.1   | ----- | ----- | 4.0   | 3.7 |
| 1930-31 | 3.3 | 3.1 | 2.5 | ----- | 3.1 | 3.1   | ----- | ----- | ----- | ----- | 2.8   | 1.8 |
| 1931-32 | 1.4 | 1.6 | 1.4 | 1.1   | 1.0 | 1.0   | 1.0   | .9    | .9    | ----- | 1.6   | 1.5 |
| 1932-33 | .9  | .9  | .7  | .9    | 1.1 | 1.3   | 1.4   | ----- | ----- | 2.5   | 2.4   | 2.5 |
| 1933-34 | 2.3 | 2.2 | 2.2 | 2.6   | 2.7 | 2.7   | 2.7   | 2.7   | ----- | ----- | 2.8   | 3.0 |

Bureau of Agricultural Economics. Tabulated from peanut market-news reports.

TABLE 304.—*Peanuts: Yearly average price per pound of cleaned and shelled peanuts for prompt shipment, f. o. b. important shipping points, November 1923–October 1934, by crop years*<sup>1</sup>VIRGINIA-NORTH CAROLINA SECTION: VIRGINIA, NORTH CAROLINA, AND TENNESSEE<sup>2</sup>

| Classification     | 1923-24      | 1924-25      | 1925-26      | 1926-27      | 1927-28      | 1928-29      | 1929-30      | 1930-31      | 1931-32      | 1932-33      | 1933-34      |
|--------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Cleaned Virginias: | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> |
| Jumbos.....        | 9½           | 11           | 7¾           | 8¾           | 11¾          | 8¾           | 7½           | 8            | 3¾           | 3½           | 5¾           |
| Fancys.....        | 7½           | 9½           | 6½           | 6¾           | 7¾           | 6½           | 5¾           | 6½           | 2½           | 3¼           | 4½           |
| Extras.....        | 6¾           | 7¾           | 5¾           | 6½           | 6¾           | 6            | 5½           | 5¼           | 2½           | 3            | 4½           |
| Shelled Virginias: |              |              |              |              |              |              |              |              |              |              |              |
| Extra large.....   | 11           | 12¾          | 9½           | 10¾          | 12           | 10¾          | 8¾           | 7½           | 4½           | 4            | 6¾           |
| No. 1.....         | 9¾           | 9½           | 8½           | 8¾           | 8            | 8½           | 5½           | 6½           | 3            | 3¾           | 5¾           |
| No. 2.....         | 7½           | 5½           | 6¼           | 7            | 5¾           | 5½           | 4½           | 5½           | 2½           | 3¼           | 5            |

SOUTHEASTERN SECTION: GEORGIA, ALABAMA, AND FLORIDA<sup>3</sup>

|                     |     |    |    |    |    |    |    |    |    |    |    |
|---------------------|-----|----|----|----|----|----|----|----|----|----|----|
| Shelled:            |     |    |    |    |    |    |    |    |    |    |    |
| Spanish, No. 1..... | 11¾ | 7½ | 8½ | 9½ | 7  | 6¾ | 5¾ | 5¾ | 2½ | 3½ | 5½ |
| Spanish, No. 2..... | 9¾  | 6¼ | 7  | 7¾ | 5½ | 5½ | 4¾ | 5  | 2¼ | 3½ | 4¾ |
| Runners, No. 1..... | 8¾  | 7¼ | 7¾ | 8½ | 6¾ | 6¼ | 4¾ | 5½ | 2½ | 3¼ | 4¾ |
| Runners, No. 2..... | 7¾  | 5¾ | 6½ | 7½ | 5½ | 5¼ | 4  | 4½ | 2½ | 3  | 4½ |

SOUTHWESTERN SECTION: TEXAS AND OKLAHOMA<sup>4</sup>

|                     |     |    |    |     |    |    |    |    |    |    |    |
|---------------------|-----|----|----|-----|----|----|----|----|----|----|----|
| Shelled:            |     |    |    |     |    |    |    |    |    |    |    |
| Spanish, No. 1..... | 11¾ | 8½ | 8½ | 10¼ | 7½ | 7¼ | 6½ | 6½ | 3  | 3½ | 5¾ |
| Spanish, No. 2..... | 9¾  | 7¼ | 7½ | 8½  | 6¼ | 6¼ | 5½ | 5½ | 2½ | 3½ | 5  |

<sup>1</sup> Crop year extends from November to next October in the Virginia-North Carolina section; farther south it begins earlier.

<sup>2</sup> Shipping points in 1933. Virginia: Boykins, Courtland, Disputanta, Emporia, Franklin, Petersburg, Stony Creek, Suffolk, Wakefield, Walters, Waverly, and Zuni. North Carolina: Ahoskie, Edenton, Elizabethtown, Enfield, Lewiston, Plymouth, Scotland Neck, Tarboro, Williamston, and Wilmington. Tennessee: Nashville and Johnsonville.

<sup>3</sup> Shipping points in 1933. Georgia: Albany, Americus, Arlington, Ashburn, Bainbridge, Blakely, Cairo, Camilla, Coleman, Columbus, Cordele, Dawson, Donalsonville, Edison, Fitzgerald, Fort Gaines, Leary, Macon, Moultrie, Pelham, Savannah, Shellman, Tifton, Wrens, and Valdosta. Alabama: Andalusia, Brundidge, Dothan, Elba, Enterprise, Eufaula, Headland, New Brockton, Ozark, Samson, and Troy. Florida: Greenwood, Live Oak, Malone, and Marianna.

<sup>4</sup> Shipping points in 1933. Texas: Abilene, Carbon, De Leon, Denison, Dublin, Fort Worth, and Houston. Oklahoma: Durant and Hugo.

Bureau of Agricultural Economics; based on returns from cleaners, shellers, and brokers.

TABLE 305.—*Peanuts: International trade, average 1925-29, annual 1931-33*

| Country                              | Calendar year       |                     |                     |                     |                     |                     |                     |                     |
|--------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                                      | Average 1925-29     |                     | 1931                |                     | 1932                |                     | 1933 <sup>1</sup>   |                     |
|                                      | Exports             | Imports             | Exports             | Imports             | Exports             | Imports             | Exports             | Imports             |
| <b>PRINCIPAL EXPORTING COUNTRIES</b> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> |
| British India.....                   | 1,320, 173          | 0                   | 1,590, 516          | 0                   | 1,058, 382          | 0                   | 1,314, 262          | 0                   |
| Senegal.....                         | 951, 057            | 66 <sup>2</sup>     | 1,005, 850          | 2 <sup>4</sup>      | 431, 298            | 2 <sup>0</sup>      | —                   | —                   |
| China.....                           | 408, 762            | 42, 314             | 723, 145            | 1, 142              | 562, 601            | 183                 | 390, 428            | 527                 |
| Nigeria.....                         | 266, 702            | 0                   | 357, 815            | 0                   | 421, 398            | 0                   | 458, 315            | 0                   |
| French possessions—India.....        | 4 251, 847          | 0                   | —                   | —                   | —                   | —                   | —                   | —                   |
| Gambia.....                          | 134, 328            | 0                   | 149, 657            | 0                   | 83, 585             | 0                   | —                   | 0                   |
| Netherlands Indies.....              | 61, 251             | 735                 | 39, 008             | 667                 | 48, 420             | 575                 | 56, 889             | 5 <sup>2</sup>      |
| Mozambique.....                      | 54, 487             | 21                  | 58, 278             | 262                 | 73, 595             | 369                 | —                   | —                   |
| Tanganyika.....                      | 25, 728             | 0                   | 6, 877              | 0                   | 35, 556             | 0                   | —                   | 0                   |
| Anglo-Egyptian Sudan.....            | 12, 732             | 0                   | 6, 230              | 0                   | 2, 886              | 0                   | 6, 951              | 0                   |
| French Guiana.....                   | 10, 722             | 2                   | 3, 067              | 0                   | 4, 476              | 0                   | —                   | 0                   |
| Spain.....                           | 3, 252              | 0                   | 2 4, 335            | 0                   | 1, 815              | 0                   | —                   | 0                   |
| Brazil.....                          | 439                 | 0                   | 171                 | 0                   | 220                 | 0                   | 272                 | 0                   |
| <b>Total.....</b>                    | <b>3, 501, 480</b>  | <b>43, 138</b>      | <b>3, 944, 949</b>  | <b>2, 075</b>       | <b>2, 724, 232</b>  | <b>1, 127</b>       | <b>2, 227, 117</b>  | <b>529</b>          |
| <b>PRINCIPAL IMPORTING COUNTRIES</b> |                     |                     |                     |                     |                     |                     |                     |                     |
| France.....                          | 12, 863             | 1, 619, 507         | 5, 300              | 1, 927, 161         | 3, 840              | 1, 992, 675         | 1, 114              | 2, 264, 039         |
| Germany.....                         | 0                   | 1, 311, 186         | 0                   | 1, 839, 597         | 0                   | 774, 878            | 0                   | 980, 581            |
| United Kingdom.....                  | 0                   | 286, 186            | 0                   | 426, 738            | 0                   | 305, 347            | 0                   | 204, 264            |
| Italy.....                           | 99                  | 252, 338            | 41                  | 269, 813            | 24                  | 140, 027            | 22                  | 179, 528            |
| Netherlands.....                     | 3, 278              | 203, 972            | 2, 937              | 286, 930            | 1, 811              | 170, 837            | 1, 327              | 240, 023            |
| United States.....                   | 4, 569              | 78, 563             | 1, 842              | 13, 620             | 7, 107              | 561                 | 1, 426              | 352                 |
| Belgium.....                         | 244                 | 61, 350             | 547                 | 59, 973             | 1, 606              | 48, 282             | 641                 | 75, 200             |
| Denmark.....                         | 0                   | 40, 102             | 0                   | 92, 857             | 0                   | 53, 705             | 0                   | 74, 544             |
| British Malaya.....                  | 12, 361             | 30, 390             | 2, 238              | 17, 434             | 3, 376              | 18, 384             | 2, 860              | 29, 136             |
| Canada.....                          | 0                   | 29, 783             | 0                   | 30, 141             | 0                   | 22, 880             | 0                   | 27, 818             |
| Japan.....                           | 885                 | 26, 603             | 150                 | 55, 761             | 17                  | 31, 590             | 15                  | 26, 263             |
| Sweden.....                          | 0                   | 16, 095             | 0                   | 17, 830             | 0                   | 2, 536              | 0                   | 2, 774              |
| Algeria.....                         | 313                 | 10, 025             | 129                 | 17, 224             | 38                  | 13, 440             | 46                  | —                   |
| Egypt.....                           | 2, 599              | 6, 894              | 1, 146              | 5, 035              | 1, 203              | 403                 | 974                 | 5, 395              |
| Tunis.....                           | 0                   | 4, 769              | 0                   | 6, 092              | 0                   | 4, 607              | 0                   | 5, 410              |
| Union of South Africa.....           | 401                 | 4, 524              | 337                 | 10, 371             | 40                  | 8, 989              | 191                 | 11, 301             |
| Argentina.....                       | 112                 | 4, 029              | 55                  | 13, 910             | 100                 | 222                 | 433                 | 0                   |
| Australia <sup>2</sup> .....         | 0                   | 3, 442              | 0                   | 23                  | 0                   | 1, 099              | 0                   | —                   |
| Philippine Islands.....              | 0                   | 3, 051              | 665                 | 5, 364              | 17                  | 4, 300              | —                   | —                   |
| Poland.....                          | 1                   | 1, 847              | 0                   | 947                 | 0                   | 524                 | 0                   | 4, 011              |
| Yugoslavia.....                      | 0                   | 1, 578              | 0                   | 196                 | 0                   | 99                  | 0                   | 8, 440              |
| <b>Total.....</b>                    | <b>37, 725</b>      | <b>3, 996, 234</b>  | <b>15, 387</b>      | <b>5, 096, 517</b>  | <b>19, 179</b>      | <b>3, 595, 345</b>  | <b>9, 049</b>       | <b>4, 234, 577</b>  |

<sup>1</sup> Preliminary.<sup>2</sup> International Yearbook of Agricultural Statistics.<sup>3</sup> Does not include Manchuria after June 1932.<sup>4</sup> 4-year average.<sup>5</sup> Java and Madura only.

Bureau of Agricultural Economics; official sources except where otherwise noted.

Includes shelled and unshelled, assuming the peanuts to be unshelled unless otherwise stated. When shelled nuts were reported, they have been reduced to terms of unshelled at the ratio of 3 pounds unshelled to 2 pounds of shelled.

TABLE 306.—*Peanut oil: Peanuts crushed and crude and virgin oil produced in the United States, 1923-24 to 1933-34*

| Year                       | Peanuts crushed <sup>1</sup> |                     |                     |                     |                     | Oil produced        |                     |                     |                     |                     |
|----------------------------|------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                            | October-December             | January-March       | April-June          | July-September      | Total               | October-December    | January-March       | April-June          | July-September      | Total               |
|                            | <i>1,000 pounds</i>          | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> |
| 1923-24.....               | 6,164                        | 4,676               | 5,471               | 1,928               | 18,239              | 1,406               | 1,122               | 1,328               | 438                 | 4,294               |
| 1924-25.....               | 17,668                       | 24,678              | 16,893              | 9,096               | 68,335              | 3,804               | 5,265               | 4,091               | 1,974               | 15,134              |
| 1925-26.....               | 17,134                       | 17,880              | 10,668              | 4,389               | 50,071              | 3,827               | 4,001               | 3,093               | 1,006               | 11,927              |
| 1926-27.....               | 10,876                       | 11,143              | 6,321               | 6,966               | 35,008              | 2,544               | 2,446               | 1,400               | 1,600               | 7,990               |
| 1927-28.....               | 21,810                       | 24,168              | 8,177               | 6,661               | 60,816              | 5,144               | 5,324               | 1,920               | 1,626               | 14,014              |
| 1928-29.....               | 14,740                       | 19,596              | 10,392              | 11,320              | 56,048              | 3,569               | 4,468               | 2,331               | 2,614               | 12,977              |
| 1929-30.....               | 81,598                       | 50,888              | 25,606              | 12,672              | 120,764             | 6,723               | 11,192              | 6,413               | 2,751               | 27,079              |
| 1930-31.....               | 22,744                       | 23,940              | 17,950              | 4,996               | 69,680              | 5,139               | 5,214               | 4,061               | 1,134               | 15,548              |
| 1931-32.....               | 15,376                       | 14,874              | 12,750              | 8,464               | 51,464              | 3,320               | 3,415               | 2,990               | 1,843               | 11,568              |
| 1932-33.....               | 19,944                       | 13,432              | 20,260              | 11,792              | 65,428              | 4,597               | 2,884               | 4,412               | 2,609               | 14,502              |
| 1933-34 <sup>2</sup> ..... | 11,821                       | 10,487              | 12,193              | 8,118               | 42,619              | 2,658               | 2,578               | 2,818               | 1,738               | 9,792               |

<sup>1</sup> Quantities reported in terms of hulled have been converted to in-the-hull basis by multiplying by 1.5.<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; compiled from reports of the Bureau of the Census on animal and vegetable fats and oils.

TABLE 307.—*Peanut oil: International trade, average 1925-29, annual 1930-33*

| Country                       | Calendar year       |                     |                     |                     |                     |                     |                     |                     |                     |                     |
|-------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                               | Average 1925-29     |                     | 1930                |                     | 1931                |                     | 1932                |                     | 1933 <sup>1</sup>   |                     |
|                               | Exports             | Imports             | Exports             | Imports             | Exports             | Imports             | Exports             | Imports             | Exports             | Imports             |
| PRINCIPAL EXPORTING COUNTRIES | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> |
| France.....                   | 70,810              | 10,793              | 59,791              | 14,374              | 98,224              | 6,751               | 83,319              | 8,171               | 97,334              | 10,637              |
| China.....                    | 70,538              | 0                   | 110,880             | 0                   | 103,591             | 0                   | 43,208              | 0                   | 40,735              | 0                   |
| Germany.....                  | 58,861              | 8,040               | 86,785              | 3,378               | 47,350              | 3,547               | 17,838              | 1,458               | 21,302              | 730                 |
| Netherlands Indies.....       | 4,292               | 1,676               | 4,703               | 2,438               | 4,796               | 2,354               | 9,453               | 1,879               | 10,394              | 235                 |
| Denmark.....                  | 4,046               | 1,203               | 9,993               | 1,846               | 11,480              | 1,266               | 9,660               | 356                 | 17,406              | 1,165               |
| Total.....                    | 208,517             | 21,712              | 282,122             | 22,036              | 270,441             | 13,918              | 163,974             | 11,864              | 187,072             | 12,567              |
| PRINCIPAL IMPORTING COUNTRIES |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| Netherlands.....              | 31,567              | 58,871              | 34,939              | 34,287              | 36,479              | 9,973               | 32,778              | 1,773               | 41,586              | 708                 |
| United Kingdom.....           | 21,326              | 37,167              | 6,895               | 49,820              | 10,667              | 42,291              | 3,721               | 11,189              | -----               | -----               |
| Algeria.....                  | 364                 | 29,416              | 1,402               | 45,122              | 822                 | 57,594              | 1,297               | 56,585              | -----               | 65,119              |
| Canada.....                   | 0                   | 20,992              | 0                   | 63,512              | 0                   | 54,347              | 0                   | 5,902               | 0                   | 81,991              |
| Italy.....                    | 114                 | 13,388              | 148                 | 1,211               | 130                 | 1,142               | 85                  | 346                 | 23                  | 280                 |
| Belgium.....                  | 4,343               | 9,717               | 2,310               | 22,833              | 3,409               | 22,907              | 3,854               | 16,161              | 1,981               | 14,283              |
| Norway.....                   | 0                   | 7,782               | 78                  | 4,422               | 0                   | 3,804               | 680                 | 1,065               | 609                 | 921                 |
| Sweden.....                   | 2,177               | 7,275               | 1,692               | 9,353               | 1,388               | 9,081               | 183                 | 5,024               | 36                  | 6,062               |
| United States.....            | 0                   | 4,427               | 0                   | 15,565              | 0                   | 14,886              | 0                   | 1,489               | 0                   | 1,318               |
| Tunis.....                    | 0                   | 4,283               | 0                   | 1,694               | 0                   | 4,594               | 0                   | 2,300               | 0                   | 1,319               |
| Philippine Islands.....       | 0                   | 4,163               | 0                   | 3,714               | 0                   | 5,916               | 0                   | 5,758               | 0                   | -----               |
| Czechoslovakia.....           | 386                 | 3,360               | 783                 | 5,650               | 739                 | 5,377               | 51                  | 9,607               | 284                 | 6,226               |
| Finland.....                  | 0                   | 2,367               | 0                   | 2,774               | 0                   | 2,084               | 0                   | 865                 | 0                   | -----               |
| Morocco.....                  | 0                   | 1,878               | 0                   | 7,267               | 0                   | 6,430               | 0                   | 3,522               | 0                   | 5,266               |
| Total.....                    | 60,277              | 205,086             | 48,247              | 267,274             | 53,634              | 240,426             | 42,629              | 121,646             | 44,519              | 133,523             |

<sup>1</sup> Preliminary.<sup>2</sup> Java and Madura only.

Bureau of Agricultural Economics; official sources except where otherwise noted. Conversions made on the basis of 7.5 pounds to the gallon.

TABLE 308.—*Peas, dry field:*<sup>1</sup> *Acres, yield, and production, by States, average 1928-31, and annual 1933 and 1934*

| State                       | Acreage harvested  |                |                   | Yield per acre     |         |                   | Production         |                  |                   |
|-----------------------------|--------------------|----------------|-------------------|--------------------|---------|-------------------|--------------------|------------------|-------------------|
|                             | Average<br>1928-31 | 1933           | 1934 <sup>2</sup> | Average<br>1928-31 | 1933    | 1934 <sup>2</sup> | Average<br>1928-31 | 1933             | 1934 <sup>2</sup> |
|                             | 1,000<br>acres     | 1,000<br>acres | 1,000<br>acres    | Bushels            | Bushels | Bushels           | 1,000<br>bushels   | 1,000<br>bushels | 1,000<br>bushels  |
| Michigan.....               | 25                 | 20             | 15                | 12.4               | 9.0     | 11.0              | 324                | 180              | 165               |
| Wisconsin.....              | 28                 | 18             | 20                | 15.2               | 17.0    | 15.5              | 439                | 306              | 310               |
| Montana.....                | 27                 | 21             | 22                | 16.0               | 14.0    | 15.0              | 423                | 294              | 330               |
| Idaho.....                  | 58                 | 85             | 85                | 19.8               | 18.5    | 17.0              | 1,136              | 1,591            | 1,445             |
| Colorado.....               | 52                 | 55             | 37                | 11.5               | 11.0    | 7.5               | 599                | 605              | 278               |
| Washington.....             |                    | 89             | 120               |                    | 18.6    | 18.5              |                    | 1,655            | 2,220             |
| 6 States <sup>3</sup> ..... | 190                | 289            | 299               | 15.4               | 16.0    | 15.9              | 2,922              | 4,631            | 4,748             |

<sup>1</sup> These figures are for the States in which peas are grown commercially in material quantities and do not include cowpeas.

<sup>2</sup> Preliminary.

<sup>3</sup> For Oregon 5,000 acres and 55,000 bushels were reported for 1934; data for previous years not available.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 309.—*Clover seed (red and alsike), sweetclover seed, lespedeza (Japan clover) seed, and alfalfa seed: Acres, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934*

## CLOVER SEED (RED AND ALSIKE)

| State              | Acreage harvested   |           |                   | Yield per acre      |      |                   | Production          |           |                   | Price for crop of— |                   |
|--------------------|---------------------|-----------|-------------------|---------------------|------|-------------------|---------------------|-----------|-------------------|--------------------|-------------------|
|                    | Average,<br>1927-31 | 1933      | 1934 <sup>1</sup> | Average,<br>1924-31 | 1933 | 1934 <sup>1</sup> | Average,<br>1927-31 | 1933      | 1934 <sup>1</sup> | 1933               | 1934 <sup>1</sup> |
|                    | Acres               | Acres     | Acres             | Bu.                 | Bu.  | Bu.               | Bu.                 | Bu.       | Bu.               | Dol.               | Dol.              |
| New York.....      | 3,540               | 1,000     | 1,000             | 1.9                 | 1.75 | 1.4               | 6,340               | 1,800     | 1,400             | 8.80               | 12.70             |
| Pennsylvania.....  | 12,600              | 12,000    | 18,000            | 1.6                 | 1.7  | 1.6               | 19,980              | 20,400    | 28,800            | 8.30               | 15.00             |
| Ohio.....          | 190,200             | 146,000   | 292,000           | 1.1                 | 1.3  | 1.0               | 235,500             | 189,800   | 292,000           | 6.60               | 11.10             |
| Indiana.....       | 166,400             | 110,000   | 176,000           | .9                  | 1.0  | .7                | 185,500             | 110,000   | 123,200           | 6.00               | 11.10             |
| Illinois.....      | 149,600             | 196,000   | 156,800           | 1.1                 | 1.1  | .9                | 171,000             | 215,600   | 141,100           | 5.90               | 11.40             |
| Michigan.....      | 108,600             | 156,000   | 62,000            | 1.4                 | 1.4  | .8                | 155,800             | 218,400   | 49,600            | 5.90               | 10.80             |
| Wisconsin.....     | 117,900             | 70,000    | 77,000            | 1.5                 | 1.6  | 1.5               | 182,500             | 112,000   | 115,500           | 6.80               | 11.00             |
| Minnesota.....     | 73,400              | 78,000    | 35,000            | 1.9                 | 2.4  | 2.5               | 128,920             | 187,200   | 87,500            | 6.20               | 11.10             |
| Iowa.....          | 121,200             | 187,000   | 41,000            | 1.0                 | .75  | .6                | 132,140             | 140,200   | 24,600            | 6.20               | 11.20             |
| Missouri.....      | 51,600              | 60,000    | 15,000            | 1.4                 | 1.1  | .9                | 66,720              | 66,000    | 13,500            | 5.80               | 10.40             |
| North Dakota.....  | 2,000               | 1,100     | 600               | 2.3                 | 1.4  | 1.0               | 4,500               | 1,500     | 600               | 6.30               | 11.40             |
| Nebraska.....      | 14,860              | 12,000    | 3,000             | 1.6                 | 1.8  | 1.5               | 24,340              | 21,600    | 4,500             | 6.50               | 9.50              |
| Kansas.....        | 10,900              | 11,000    | 3,000             | 1.7                 | 1.4  | 1.2               | 17,120              | 15,400    | 3,600             | 6.60               | 9.80              |
| Maryland.....      |                     | 8,000     | 28,000            |                     | 1.1  | 1.0               |                     | 8,800     | 28,000            | 7.60               | 10.80             |
| Virginia.....      |                     | 3,000     | 6,000             |                     | 1.0  | .4                |                     | 3,000     | 2,400             | 7.90               | 12.80             |
| Kentucky.....      | <sup>2</sup> 6,667  | 1,000     | 1,000             |                     | 1.6  | 1.5               | <sup>2</sup> 10,300 | 1,600     | 1,500             | 6.60               | 9.80              |
| Tennessee.....     | 4,600               | 3,000     | 3,000             | 1.9                 | 1.6  | 1.3               | 9,120               | 4,600     | 3,900             | 6.60               | 9.60              |
| Idaho.....         | 31,600              | 23,000    | 21,000            | 4.2                 | 5.0  | 5.2               | 137,480             | 115,000   | 109,200           | 5.30               | 8.60              |
| Wyoming.....       | <sup>2</sup> 2,533  | 2,500     | 2,000             |                     | 2.0  | 5                 | <sup>2</sup> 7,400  | 5,000     | 1,000             | 5.80               | 8.20              |
| Colorado.....      | <sup>2</sup> 1,875  | 1,400     | 500               |                     | 3.5  | 2.5               | <sup>2</sup> 9,750  | 4,900     | 1,200             | 6.00               | 7.20              |
| Oregon.....        | 18,000              | 14,000    | 22,000            | 3.0                 | 3.3  | 3.0               | 60,040              | 46,200    | 66,000            | 6.60               | 10.60             |
| United States..... | 1,092,820           | 1,096,000 | 963,900           | 1.38                | 1.36 | 1.14              | 1,570,400           | 1,489,200 | 1,099,100         | 6.16               | 10.91             |

<sup>1</sup> Preliminary.

<sup>2</sup> Short-time average.

TABLE 309.—Clover seed (red and alsike), sweetclover seed, lespedeza (Japan clover) seed, and alfalfa seed: Acreage, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934—Continued

## SWEETCLOVER SEED

| State             | Acreage harvested |         |                   | Yield per acre   |      |                   | Production       |         |                   | Price for crop of— |                   |
|-------------------|-------------------|---------|-------------------|------------------|------|-------------------|------------------|---------|-------------------|--------------------|-------------------|
|                   | Average, 1927-31  | 1933    | 1934 <sup>1</sup> | Average, 1927-31 | 1933 | 1934 <sup>1</sup> | Average, 1927-31 | 1933    | 1934 <sup>1</sup> | 1933               | 1934 <sup>1</sup> |
|                   | Acres             | Acres   | Acres             | Bu.              | Bu.  | Bu.               | Bu.              | Bu.     | Bu.               | Dol.               | Dol.              |
| Ohio.....         | 6,200             | 5,000   | 8,000             | 3.2              | 2.5  | 2.4               | 19,520           | 12,500  | 19,200            | 2.50               | 4.30              |
| Indiana.....      | 3,000             | 2,000   | 7,000             | 3.2              | 2.0  | 1.5               | 7,800            | 4,000   | 10,500            | 3.00               | 5.00              |
| Illinois.....     | 15,400            | 16,000  | 16,800            | 3.6              | 2.5  | 2.5               | 53,100           | 40,000  | 42,000            | 2.80               | 4.30              |
| Wisconsin.....    |                   | 3,000   | 1,400             |                  | 3.5  | 4.0               |                  | 10,500  | 5,600             | 2.70               | 4.40              |
| Minnesota.....    | 41,200            | 73,000  | 62,000            | 4.3              | 4.0  | 4.5               | 182,100          | 292,000 | 279,000           | 1.95               | 3.70              |
| Iowa.....         | 13,600            | 10,000  | 18,000            | 4.0              | 3.0  | 3.0               | 54,280           | 30,000  | 54,000            | 2.40               | 3.95              |
| Missouri.....     | 4,600             | 2,000   | 2,000             | 3.3              | 3.1  | 2.7               | 14,300           | 6,200   | 5,400             | 2.85               | 4.15              |
| North Dakota..... | 63,900            | 42,000  | 35,700            | 4.2              | 2.8  | 2.5               | 247,900          | 117,600 | 89,200            | 2.25               | 4.00              |
| South Dakota..... | 52,200            | 18,400  | 3,700             | 3.7              | 2.4  | 2.9               | 195,980          | 44,200  | 10,700            | 1.95               | 3.10              |
| Nebraska.....     | 22,640            | 21,000  | 21,000            | 3.9              | 3.7  | 3.5               | 92,220           | 77,700  | 73,500            | 2.50               | 3.65              |
| Kansas.....       | 19,440            | 11,000  | 6,000             | 4.0              | 3.8  | 2.7               | 76,620           | 41,800  | 16,200            | 2.20               | 3.55              |
| Montana.....      | 5,100             | 6,000   | 5,100             | 3.8              | 3.5  | 2.7               | 20,800           | 21,000  | 13,800            | 3.10               | 3.50              |
| Colorado.....     | 5,200             | 3,500   | 2,000             | 5.0              | 3.5  | 3.5               | 27,000           | 12,200  | 7,000             | 2.55               | 3.90              |
| United States..   | 253,800           | 212,900 | 188,700           | 4.00             | 3.33 | 3.32              | 997,300          | 709,700 | 626,100           | 2.22               | 3.83              |

## LESPEDeza (JAPAN CLOVER) SEED:

|                                  |         |         |      |      |           |           |      |      |
|----------------------------------|---------|---------|------|------|-----------|-----------|------|------|
| Virginia.....                    | 10,000  | 20,000  | 10.5 | 9.5  | 105,000   | 190,000   | 1.15 | 1.80 |
| North Carolina.....              | 50,000  | 50,000  | 4.5  | 6.5  | 225,000   | 325,000   | 1.25 | 2.00 |
| Kentucky.....                    | 91,000  | 91,000  | 8.0  | 7.0  | 728,000   | 637,000   | 1.15 | 1.45 |
| Tennessee.....                   | 165,000 | 83,000  | 9.5  | 9.0  | 1,567,500 | 747,000   | 1.15 | 1.50 |
| Mississippi.....                 | 2,000   | 1,800   | 4.0  | 3.7  | 8,000     | 6,700     | 1.12 | 1.25 |
| Louisiana.....                   | 1,500   | 1,500   | 4.0  | 5.0  | 6,000     | 7,500     | 1.20 | 1.35 |
| United States <sup>1</sup> ..... | 319,500 | 247,300 | 8.26 | 7.74 | 2,639,500 | 1,913,200 | 1.16 | 1.60 |

## ALFALFA SEED

|                    |                     |         |         |                  |      |                     |         |           |         |       |       |
|--------------------|---------------------|---------|---------|------------------|------|---------------------|---------|-----------|---------|-------|-------|
| Ohio.....          |                     | 10,000  | 20,000  | 1.2              | 1.3  |                     | 12,000  | 26,000    | 7.00    | 10.80 |       |
| Indiana.....       |                     | 6,000   | 10,000  | 1.2              | 1.3  |                     | 7,200   | 13,000    | 8.50    | 13.60 |       |
| Michigan.....      | <sup>2</sup> 8,667  | 25,000  | 20,000  | 1.7              | 1.5  | <sup>2</sup> 4,400  | 42,500  | 30,000    | 6.70    | 11.30 |       |
| Wisconsin.....     | <sup>2</sup> 11,333 | 36,000  | 40,000  | 1.3              | 1.2  | <sup>2</sup> 17,000 | 46,800  | 48,000    | 8.60    | 12.70 |       |
| Minnesota.....     | 19,120              | 54,000  | 40,000  | <sup>2</sup> 1.7 | 1.5  | 29,000              | 81,000  | 52,000    | 7.00    | 10.90 |       |
| Iowa.....          |                     | 7,500   | 15,000  | 1.5              | 1.4  |                     | 11,200  | 21,000    | 9.00    | 14.90 |       |
| North Dakota.....  | 12,240              | 15,000  | 11,300  | 1.9              | 1.0  | 1.0                 | 21,340  | 15,000    | 11,300  | 7.90  | 10.90 |
| South Dakota.....  | 37,040              | 35,000  | 16,400  | 1.9              | 1.4  | 1.2                 | 70,500  | 49,000    | 19,700  | 7.00  | 10.80 |
| Nebraska.....      | 23,600              | 47,000  | 42,000  | 2.3              | 2.0  | 2.2                 | 54,880  | 94,000    | 92,400  | 6.20  | 9.20  |
| Kansas.....        | 31,180              | 60,000  | 48,000  | 2.6              | 3.3  | 2.5                 | 85,400  | 198,000   | 120,000 | 5.00  | 7.90  |
| Oklahoma.....      | 12,580              | 12,200  | 14,600  | 3.0              | 3.3  | 2.0                 | 39,840  | 40,300    | 29,200  | 5.00  | 6.40  |
| Texas.....         | 3,540               | 2,000   | 2,000   | 2.9              | 3.1  | 3.0                 | 10,920  | 6,200     | 6,000   | 6.10  | 8.00  |
| Montana.....       | 38,000              | 31,000  | 10,800  | 2.3              | 2.0  | 2.0                 | 85,920  | 62,000    | 21,600  | 6.70  | 12.20 |
| Idaho.....         | 29,600              | 28,000  | 26,000  | 4.0              | 4.0  | 3.8                 | 120,000 | 112,000   | 98,800  | 6.00  | 11.00 |
| Wyoming.....       | 7,960               | 15,000  | 9,000   | 3.1              | 2.5  | 1.5                 | 21,720  | 37,500    | 13,500  | 6.40  | 10.30 |
| Colorado.....      | 9,820               | 10,000  | 6,000   | 3.4              | 2.5  | 2.0                 | 32,360  | 25,000    | 12,000  | 5.90  | 8.60  |
| New Mexico.....    | 4,380               | 3,200   | 1,900   | 3.6              | 3.0  | 3.1                 | 15,420  | 9,600     | 5,900   | 6.00  | 6.60  |
| Arizona.....       | 17,200              | 14,000  | 14,000  | 5.0              | 5.0  | 6.1                 | 79,600  | 70,000    | 55,400  | 4.30  | 7.40  |
| Utah.....          | 49,800              | 22,000  | 27,000  | 3.2              | 1.5  | 2.2                 | 111,160 | 33,000    | 59,400  | 5.20  | 10.20 |
| Oregon.....        | 2,600               | 3,000   | 3,000   | <sup>2</sup> 3.7 | 2.4  | 3.5                 | 9,380   | 7,200     | 10,500  | 7.40  | 11.50 |
| California.....    | 15,980              | 15,400  | 15,000  | 3.6              | 4.3  | 3.0                 | 57,900  | 66,200    | 45,000  | 5.20  | 7.50  |
| United States..... | 327,840             | 451,300 | 392,000 | 3.02             | 2.27 | 2.09                | 874,140 | 1,025,700 | 820,700 | 6.02  | 9.73  |

<sup>1</sup> Preliminary.<sup>2</sup> Short-time average.<sup>3</sup> Bushels of 25 pounds, although the weight varies in different States.<sup>4</sup> Dec. 1 price.<sup>5</sup> Additional quantities produced in Missouri and Illinois but data insufficient for preparing estimates.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.



TABLE 310.—*Clover seed, red: Average price per bushel received by producers, United States, 1925-26 to 1934-35*

|              | Sept.<br>15 | Oct.<br>15  | Nov.<br>15  | Dec.<br>15  | Jan.<br>15  | Feb.<br>15  | Mar.<br>15  | Apr.<br>15  | May<br>15   | June<br>15  | July<br>15  | Aug.<br>15  | Weight-<br>ed aver-<br>age |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------------|
|              | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i>                |
| 1925-26..... | 13.42       | 14.42       | 14.85       | 15.48       | 16.04       | 16.83       | 17.45       | 17.88       | 18.08       | 17.16       | 17.17       | 16.83       | 15.27                      |
| 1926-27..... | 16.63       | 17.21       | 17.85       | 17.89       | 19.07       | 20.18       | 21.16       | 22.75       | 22.45       | 22.07       | 20.69       | 17.94       | 18.20                      |
| 1927-28..... | 16.78       | 15.67       | 15.07       | 15.33       | 15.97       | 16.37       | 16.90       | 16.92       | 17.04       | 16.89       | 16.42       | 15.90       | 15.98                      |
| 1928-29..... | 16.26       | 16.49       | 16.68       | 16.81       | 16.96       | 17.37       | 17.54       | 17.96       | 17.90       | 17.62       | 17.17       | 16.30       | 16.89                      |
| 1929-30..... | 12.48       | 10.68       | 9.75        | 9.94        | 9.92        | 9.95        | 10.03       | 10.23       | 10.23       | 10.40       | 10.34       | 11.01       | 10.45                      |
| 1930-31..... | 11.65       | 12.47       | 12.35       | 11.76       | 11.78       | 11.64       | 11.54       | 11.59       | 11.80       | 11.84       | 10.76       | 10.08       | 11.55                      |
| 1931-32..... | 7.99        | 6.73        | 6.97        | 7.34        | 7.27        | 7.31        | 7.58        | 7.69        | 7.58        | 7.19        | 6.77        | 5.79        | 7.27                       |
| 1932-33..... | 5.34        | 4.70        | 4.61        | 4.67        | 4.73        | 4.78        | 4.95        | 5.25        | 5.46        | 5.58        | 6.04        | 6.28        | 5.01                       |
| 1933-34..... | 5.83        | 5.72        | 6.00        | 6.10        | 6.40        | 6.99        | 7.39        | 7.04        | 7.21        | 7.40        | 7.28        | 8.39        | 6.16                       |
| 1934-35..... | 10.17       | 10.98       | 10.98       | 11.48       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | 10.91                      |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 Yearbook, table 334. Only monthly prices are comparable.

TABLE 311.—*Alfalfa seed: Average price per bushel received by producers, United States, 1925-26 to 1934-35*

|              | July<br>15  | Aug.<br>15  | Sept.<br>15 | Oct.<br>15  | Nov.<br>15  | Dec.<br>15  | Jan.<br>15  | Feb.<br>15  | Mar.<br>15  | Apr.<br>15  | May<br>15   | June<br>15  | Weight-<br>ed aver-<br>age |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------------|
|              | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i>                |
| 1925-26..... | 11.41       | 9.88        | 10.51       | 10.30       | 10.65       | 9.87        | 9.51        | 9.48        | 9.82        | 9.94        | 9.92        | 10.22       | 10.51                      |
| 1926-27..... | 9.79        | 9.37        | 9.17        | 8.94        | 9.42        | 9.48        | 10.12       | 10.33       | 10.50       | 11.04       | 10.63       | 10.62       | 10.12                      |
| 1927-28..... | 10.17       | 9.62        | 9.69        | 9.78        | 9.45        | 9.76        | 9.55        | 9.74        | 10.11       | 10.35       | 10.52       | 10.91       | 9.67                       |
| 1928-29..... | 10.24       | 10.38       | 10.25       | 10.71       | 11.96       | 12.69       | 12.67       | 13.19       | 13.84       | 14.19       | 14.69       | 14.91       | 11.70                      |
| 1929-30..... | 14.68       | 13.52       | 12.85       | 11.68       | 10.83       | 11.10       | 11.15       | 11.16       | 11.97       | 11.97       | 12.38       | 12.05       | 12.01                      |
| 1930-31..... | 12.10       | 11.91       | 11.36       | 10.68       | 10.18       | 9.86        | 9.97        | 10.20       | 9.91        | 9.89        | 9.70        | 9.64        | 10.75                      |
| 1931-32..... | 9.98        | 9.69        | 8.35        | 6.94        | 6.58        | 6.97        | 6.36        | 6.58        | 6.70        | 6.79        | 6.58        | 6.47        | 7.34                       |
| 1932-33..... | 6.53        | 5.98        | 5.59        | 5.25        | 5.19        | 5.42        | 5.68        | 5.89        | 5.93        | 6.32        | 6.64        | 6.82        | 5.67                       |
| 1933-34..... | 7.10        | 7.05        | 6.31        | 5.52        | 5.12        | 5.10        | 5.32        | 5.90        | 6.27        | 6.14        | 6.19        | 6.70        | 6.02                       |
| 1934-35..... | 6.77        | 7.02        | 9.35        | 10.46       | 10.27       | 10.45       | -----       | -----       | -----       | -----       | -----       | -----       | 9.73                       |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 Yearbook, table 333. Only monthly prices are comparable.

TABLE 312.—*Timothy seed: Acreage, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934*

| State             | Acreage harvested   |                  |                   | Yield per acre      |            |                   | Production          |            |                   | Price for crop of— |                   |
|-------------------|---------------------|------------------|-------------------|---------------------|------------|-------------------|---------------------|------------|-------------------|--------------------|-------------------|
|                   | Average,<br>1927-31 | 1933             | 1934 <sup>1</sup> | Average,<br>1924-31 | 1933       | 1934 <sup>1</sup> | Average,<br>1927-31 | 1933       | 1934 <sup>1</sup> | 1933               | 1934 <sup>1</sup> |
|                   |                     |                  |                   |                     |            |                   |                     |            |                   |                    |                   |
|                   | <i>Acres</i>        | <i>Acres</i>     | <i>Acres</i>      | <i>Bu.</i>          | <i>Bu.</i> | <i>Bu.</i>        | <i>Bu.</i>          | <i>Bu.</i> | <i>Bu.</i>        | <i>Dol.</i>        | <i>Dol.</i>       |
| Pennsylvania..... | 6,200               | 4,400            | 5,000             | 3.8                 | 2.8        | 2.3               | 25,460              | 12,300     | 11,500            | 2.30               | 7.60              |
| Ohio.....         | 39,600              | 21,000           | 13,000            | 4.0                 | 3.3        | 2.5               | 164,060             | 69,300     | 32,500            | 1.95               | 7.70              |
| Indiana.....      | 12,600              | 14,000           | 11,000            | 3.3                 | 2.7        | 2.6               | 45,620              | 37,800     | 28,600            | 2.15               | 7.10              |
| Illinois.....     | 75,800              | 57,000           | 22,800            | 3.4                 | 2.6        | 1.5               | 274,800             | 148,200    | 34,200            | 1.95               | 6.40              |
| Wisconsin.....    | 11,600              | 2,300            | 500               | 4.2                 | 3.0        | 3.2               | 42,760              | 6,900      | 1,600             | 2.20               | 6.70              |
| Minnesota.....    | 36,180              | 23,000           | 17,000            | 4.0                 | 3.4        | 3.5               | 144,480             | 78,200     | 59,500            | 1.80               | 5.90              |
| Iowa.....         | 197,280             | 110,000          | 36,000            | 4.0                 | 3.1        | 1.75              | 883,440             | 341,000    | 63,000            | 2.00               | 5.90              |
| Missouri.....     | 87,600              | 48,000           | 20,000            | 3.4                 | 2.9        | 1.5               | 309,420             | 139,200    | 30,000            | 1.60               | 5.70              |
| North Dakota..... | 2,980               | 1,400            | 1,000             | 3.2                 | 1.5        | 1.0               | 8,440               | 2,100      | 1,000             | 1.80               | 4.60              |
| South Dakota..... | 7,900               | ( <sup>2</sup> ) | ( <sup>2</sup> )  | 2.9                 | -----      | -----             | 25,520              | -----      | -----             | -----              | -----             |
| United States..   | 479,540             | 281,100          | 126,300           | 3.78                | 2.97       | 2.07              | 1,881,800           | 835,000    | 261,900           | 1.91               | 7.31              |

<sup>1</sup> Preliminary.<sup>2</sup> Less than 500 acres.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 313.—*Timothy seed: Average price per bushel received by producers, United States, 1925-26 to 1934-35*

| Year         | Aug.<br>15        | Sept.<br>15 | Oct.<br>15  | Nov.<br>15  | Dec.<br>15  | Jan.<br>15  | Feb.<br>15  | Mar.<br>15  | Apr.<br>15  | May<br>15   | June<br>15  | July<br>15  | Weight-<br>ed aver-<br>age |
|--------------|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------------|
|              | <i>Dol.</i>       | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i>                |
| 1925-26..... | 3.36              | 3.21        | 3.21        | 3.31        | 3.41        | 3.38        | 3.56        | 3.51        | 3.47        | 3.36        | 3.41        | 3.26        | 3.35                       |
| 1926-27..... | 2.68              | 2.55        | 2.61        | 2.46        | 2.58        | 2.62        | 2.70        | 2.69        | 2.76        | 2.69        | 2.76        | 2.58        | 2.73                       |
| 1927-28..... | 2.06              | 1.66        | 1.58        | 1.61        | 1.73        | 1.78        | 1.92        | 1.86        | 1.88        | 1.96        | 2.08        | 2.07        | 1.84                       |
| 1928-29..... | 1.86              | 1.91        | 2.08        | 2.20        | 2.20        | 2.41        | 2.49        | 2.62        | 2.67        | 2.65        | 2.56        | 2.36        | 2.17                       |
| 1929-30..... | 1.69 <sup>1</sup> | 1.88        | 2.02        | 2.17        | 2.25        | 2.46        | 2.37        | 2.51        | 2.67        | 2.69        | 2.65        | 2.53        | 1.97                       |
| 1930-31..... | 2.51              | 2.62        | 3.06        | 3.11        | 3.09        | 3.29        | 3.32        | 3.58        | 3.61        | 3.43        | 3.16        | 2.33        | 2.50                       |
| 1931-32..... | 1.38              | 1.43        | 1.44        | 1.46        | 1.54        | 1.53        | 1.62        | 1.70        | 1.59        | 1.61        | 1.39        | 1.20        | 1.39                       |
| 1932-33..... | .91               | .93         | .88         | .92         | .96         | .98         | .99         | 1.01        | 1.02        | 1.10        | 1.10        | 1.38        | .94                        |
| 1933-34..... | 1.65              | 1.83        | 2.13        | 2.20        | 2.18        | 2.13        | 2.59        | 2.94        | 2.96        | 2.75        | 3.25        | 3.29        | 1.91                       |
| 1934-35..... | 4.65              | 7.54        | 7.51        | 7.37        | 7.68        |             |             |             |             |             |             |             | 1 6.31                     |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; averages for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 Yearbook, table 335. Only monthly prices are comparable.

TABLE 314.—*Field seeds: Average price per 100 pounds, specified markets, 1925-34*

| Season,<br>January-<br>May | Alfalfa,<br>Kansas<br>City | Alsike<br>clover,<br>Chi-<br>cago | Red<br>clover,<br>Chi-<br>cago | Ken-<br>tucky<br>blue-<br>grass,<br>Kansas<br>City | Timothy,<br>Chi-<br>cago | Sweet-<br>clover,<br>Minne-<br>apolis | Meadow-<br>fescue,<br>Kansas<br>City | Lespe-<br>deza,<br>Louis-<br>ville | German<br>millet,<br>Kansas<br>City | Amber<br>sorgo,<br>Kansas<br>City | Hairy<br>vetch,<br>Balti-<br>more | Sudan<br>grass,<br>Kansas<br>City |
|----------------------------|----------------------------|-----------------------------------|--------------------------------|--|--------------------------|---------------------------------------|--------------------------------------|------------------------------------|-------------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
|                            | <i>Dol.</i>                | <i>Dol.</i>                       | <i>Dol.</i>                    | <i>Dol.</i>  | <i>Dol.</i>              | <i>Dol.</i>                           | <i>Dol.</i>                          | <i>Dol.</i>                        | <i>Dol.</i>                         | <i>Dol.</i>                       | <i>Dol.</i>                       | <i>Dol.</i>                       |
| 1925...                    | 22.84                      | 23.38                             | 33.97                          | 28.00  | 6.79                     | 12.34                                 | 9.42                                 | 19.50                              | 4.98                                | 2.24                              | 8.82                              | 5.68                              |
| 1926...                    | 20.40                      | 27.55                             | 33.67                          | 38.05  | 7.94                     | 9.65                                  | 15.49                                | 15.74                              | 3.10                                | 2.72                              | 12.25                             | 4.31                              |
| 1927...                    | 19.90                      | 37.42                             | 42.54                          | 20.53  | 5.97                     | 13.65                                 | 25.00                                | 8.57                               | 3.25                                | 3.10                              | 15.10                             | 6.68                              |
| 1928...                    | 21.90                      | 27.80                             | 30.65                          | 19.72  | 4.74                     | 8.55                                  | 14.70                                | 17.65                              | 2.45                                | 1.99                              | 9.72                              | 3.62                              |
| 1929...                    | 26.04                      | 34.65                             | 33.63                          | 31.31  | 6.54                     | 8.50                                  | 16.01                                | 20.43                              | 3.44                                | 2.09                              | 9.30                              | 5.80                              |
| 1930...                    | 24.81                      | 19.90                             | 21.35                          | 20.00  | 8.06                     | 8.00                                  | 10.00                                | 14.37                              | 3.45                                | 3.47                              | 9.00                              | 5.40                              |
| 1931...                    | 22.56                      | 23.88                             | 25.04                          | 34.37  | 10.55                    | 9.22                                  | 10.76                                | 14.69                              | 3.69                                | 2.81                              | 8.45                              | 7.38                              |
| 1932...                    | 13.65                      | 15.05                             | 16.35                          | 13.45  | 4.30                     | 5.50                                  | 5.50                                 | 8.30                               | 1.80                                | 1.20                              | 7.50                              | 1.75                              |
| 1933...                    | 13.60                      | 11.95                             | 11.40                          | 8.35   | 3.25                     | 4.50                                  | 4.15                                 | 7.50                               | 1.60                                | 1.15                              | 7.00                              | 2.10                              |
| 1934...                    | 13.00                      | 16.25                             | 14.75                          | 13.40  | 8.50                     | 6.50                                  | 7.05                                 | 5.00                               | 3.35                                | 1.60                              | 8.75                              | 5.50                              |

Bureau of Agricultural Economics. Compiled from weekly reports to the Bureau from wholesale seedsmen in the various markets. These prices are the average wholesale selling prices for high-quality seed.

TABLE 315.—*Field seeds: Average wholesale price per 100 pounds at specified markets, by months, 1925-34*

| Season    | Alfalfa, common, Kansas City    |                |                |                |                | Alsike clover, Chicago   |                |                |                |                |
|-----------|---------------------------------|----------------|----------------|----------------|----------------|--------------------------|----------------|----------------|----------------|----------------|
|           | Jan.                            | Feb.           | Mar.           | Apr.           | May            | Jan.                     | Feb.           | Mar.           | Apr.           | May            |
|           | <i>Dollars</i>                  | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i>           | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> |
| 1925..... | 22.00                           | 22.10          | 23.10          | 23.50          | 23.50          | 21.75                    | 22.35          | 23.05          | 24.75          | 25.00          |
| 1926..... | 20.00                           | 20.00          | 20.00          | 21.00          | 21.00          | 26.10                    | 27.25          | 27.85          | 28.20          | 28.40          |
| 1927..... | 19.50                           | 20.00          | 20.00          | 20.00          | 20.00          | 36.00                    | 37.95          | 39.45          | 38.85          | 34.85          |
| 1928..... | 21.50                           | 22.00          | 22.00          | 22.00          | 22.00          | 28.35                    | 28.10          | 27.80          | 27.70          | 27.10          |
| 1929..... | 26.00                           | 26.00          | 26.20          | 26.00          | 26.00          | 34.65                    | 33.90          | 35.15          | 35.45          | 34.15          |
| 1930..... | 23.55                           | 24.75          | 25.25          | 25.25          | 25.25          | 20.10                    | 19.90          | 19.50          | 20.10          | 19.90          |
| 1931..... | 22.90                           | 22.50          | 22.50          | 22.50          | 22.50          | 23.70                    | 24.00          | 23.75          | 23.20          | 22.75          |
| 1932..... | 13.50                           | 13.50          | 13.50          | 13.80          | 14.00          | 15.50                    | 15.30          | 15.00          | 14.75          | 14.65          |
| 1933..... | 13.50                           | 13.50          | 13.00          | 13.60          | 14.50          | 11.70                    | 11.80          | 11.95          | 12.00          | 12.30          |
| 1934..... | 12.00                           | 13.00          | 13.25          | 13.50          | 13.25          | 16.50                    | 16.50          | 16.50          | 16.25          | 15.50          |
| Season    | Red clover, Chicago             |                |                |                |                | Sweetclover, Minneapolis |                |                |                |                |
|           | Jan.                            | Feb.           | Mar.           | Apr.           | May            | Jan.                     | Feb.           | Mar.           | Apr.           | May            |
|           | <i>Dollars</i>                  | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i>           | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> |
| 1925..... | 34.20                           | 36.00          | 34.30          | 33.35          | 32.00          | 13.00                    | 13.00          | 12.75          | 11.95          | 11.00          |
| 1926..... | 32.15                           | 36.50          | 34.70          | 34.00          | 34.00          | 9.00                     | 9.45           | 9.85           | 9.95           | 10.00          |
| 1927..... | 38.60                           | 42.30          | 45.00          | 44.25          | 42.55          | 14.35                    | 14.35          | 14.00          | 13.10          | 12.50          |
| 1928..... | 32.50                           | 30.95          | 29.95          | 30.20          | 29.70          | 8.75                     | 8.70           | 8.45           | 8.45           | 8.40           |
| 1929..... | 33.00                           | 33.20          | 34.40          | 34.35          | 33.20          | 8.50                     | 8.50           | 8.50           | 8.50           | 8.50           |
| 1930..... | 21.20                           | 21.35          | 21.00          | 21.60          | 21.60          | 8.00                     | 8.00           | 8.00           | 8.00           | 8.00           |
| 1931..... | 26.00                           | 26.05          | 25.45          | 24.15          | 23.55          | 9.50                     | 9.40           | 9.15           | 9.05           | 9.00           |
| 1932..... | 16.80                           | 16.50          | 16.25          | 16.15          | 16.10          | 5.75                     | 5.50           | 5.50           | 5.50           | 5.25           |
| 1933..... | 11.70                           | 10.55          | 10.85          | 11.60          | 12.30          | 4.50                     | 4.50           | 4.50           | 4.50           | 4.50           |
| 1934..... | 15.00                           | 15.00          | 15.00          | 14.75          | 14.00          | 6.50                     | 6.50           | 6.50           | 6.75           | 6.25           |
| Season    | Kentucky bluegrass, Kansas City |                |                |                |                | Timothy, Chicago         |                |                |                |                |
|           | Jan.                            | Feb.           | Mar.           | Apr.           | May            | Jan.                     | Feb.           | Mar.           | Apr.           | May            |
|           | <i>Dollars</i>                  | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i>           | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> |
| 1925..... | 28.00                           | 28.00          | 28.00          | 28.00          | 28.00          | 6.95                     | 6.70           | 6.50           | 6.85           | 6.95           |
| 1926..... | 40.00                           | 39.25          | 37.00          | 37.00          | 37.00          | 8.10                     | 8.10           | 7.95           | 7.80           | 7.75           |
| 1927..... | 20.25                           | 21.00          | 21.00          | 20.40          | 20.00          | 6.05                     | 6.05           | 5.85           | 5.95           | 5.95           |
| 1928..... | 19.50                           | 19.50          | 19.60          | 20.00          | 20.00          | 4.75                     | 4.55           | 4.35           | 4.75           | 5.30           |
| 1929..... | 31.50                           | 30.75          | 31.30          | 31.50          | 31.50          | 6.75                     | 6.70           | 6.62           | 6.45           | 6.15           |
| 1930..... | 20.00                           | 20.00          | 20.00          | 20.00          | 20.00          | 7.10                     | 7.20           | 7.30           | 8.25           | 10.45          |
| 1931..... | 34.10                           | 34.25          | 34.50          | 34.50          | 34.50          | 10.20                    | 10.45          | 10.45          | 10.70          | 10.95          |
| 1932..... | 13.00                           | 13.25          | 13.60          | 13.75          | 13.75          | 4.65                     | 4.40           | 4.25           | 4.05           | 4.00           |
| 1933..... | 8.35                            | 8.25           | 8.30           | 8.00           | 8.75           | 3.20                     | 3.15           | 3.00           | 3.20           | 3.80           |
| 1934..... | 13.25                           | 13.25          | 13.50          | 13.50          | 13.50          | 9.00                     | 9.00           | 8.50           | 8.25           | 7.75           |

Bureau of Agricultural Economics. Compiled from weekly reports to the Bureau from wholesale seedmen in the various markets. These prices are the average wholesale selling price for high-quality seed.

TABLE 316.—*Forage-plant seeds: Imports into United States, 1924-25 to 1933-34*  
SEEDS PERMITTED ENTRY UNDER FEDERAL SEED ACT

| Kind of seed            | Year beginning July— |              |              |              |              |              |              |              |              |              |
|-------------------------|----------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                         | 1924-25              | 1925-26      | 1926-27      | 1927-28      | 1928-29      | 1929-30      | 1930-31      | 1931-32      | 1932-33      | 1933-34      |
|                         | 1,000<br>lb.         | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. |
| Alfalfa.....            | 4,783                | 4,548        | 5,134        | 782          | 1,146        | 337          | 233          | 353          | 41           | 47           |
| Canada bluegrass.....   | 1,150                | 284          | 882          | 1,102        | 1,228        | 608          | 985          | 806          | 191          | 128          |
| Kentucky bluegrass..... |                      | 11           | 22           |              |              |              |              |              |              |              |
| Awkless bromegrass..... |                      |              |              |              | 5            | 4            |              |              | 2            | 40           |
| Alsike clover.....      | 10,425               | 10,989       | 4,163        | 7,609        | 4,798        | 7,220        | 94           |              |              |              |
| Crimson clover.....     | 4,834                | 5,768        | 2,385        | 1,346        | 3,395        | 3,099        | 3,079        | 1,831        | 685          | 1,977        |
| Red clover.....         | 6,541                | 19,725       | 10,816       | 4,641        | 7,447        | 2,154        | 2,805        | 31           |              | 11           |
| White clover.....       | 1,227                | 1,668        | 975          | 1,773        | 2,410        | 2,278        | 708          | 893          | 1,943        | 962          |
| Clover mixtures.....    | 13                   | 122          | 24           | 41           | 250          | 32           | 15           | 16           |              | 11           |
| Meadow fescue.....      | 1                    | 13           | 16           |              | 8            | 1            |              |              |              |              |
| Porttail millet.....    | 243                  | 125          |              | 30           | 108          |              |              |              |              |              |
| Grass mixtures.....     |                      |              |              |              | 5            | 5            | 1            | 3            | 1            |              |
| Orchard grass.....      | 992                  | 253          | 260          | 173          | 2,377        | 318          | 342          | 1            | 19           | 5            |
| Winter rape.....        | 4,345                | 6,526        | 6,788        | 6,438        | 6,982        | 6,681        | 5,119        | 3,762        | 5,174        | 5,281        |
| English ryegrass.....   | 1,335                | 2,302        | 1,203        | 1,083        | 1,180        | 937          | 824          | 646          | 463          | 532          |
| Italian ryegrass.....   | 831                  | 1,683        | 833          | 456          | 300          | 244          | 200          | 75           | 42           | 26           |
| Timothy.....            | 1                    | 3            | 45           | 23           |              | 37           |              |              |              |              |
| Hairy vetch.....        | 2,068                | 3,986        | 2,124        | 3,895        | 4,034        | 2,483        | 1,628        | 2,365        | 2,894        | 3,141        |
| Hungarian vetch.....    |                      |              | 76           |              |              |              |              |              |              | 270          |
| Sprang vetch.....       | 1,266                | 1,603        | 902          | 563          | 1            | 821          | 701          | 202          | 96           | 718          |

## SEEDS NOT SUBJECT TO THE FEDERAL SEED ACT

|                                  |       |       |       |       |       |     |       |       |     |       |
|----------------------------------|-------|-------|-------|-------|-------|-----|-------|-------|-----|-------|
| Bentgrass.....                   | 258   | 1,328 | 537   | 554   | 649   | 890 | 213   | 327   | 52  | 50    |
| Biennial white sweetclover.....  | 3,493 | 5,879 | 4,130 | 3,379 | 1,464 | 206 |       |       |     | 1     |
| Biennial yellow sweetclover..... | 52    | 502   | 174   | 116   | 29    | 3   |       |       |     |       |
| Bur clover.....                  | 5     |       |       |       |       |     |       |       |     | 4     |
| Crested dogtail.....             | 44    | 39    | 18    | 55    | 79    | 22  | 40    | 28    | 16  | 6     |
| Chewings fescue.....             | 842   | 655   | 954   | 1,107 | 1,453 | 983 | 1,018 | 1,030 | 920 | 1,077 |
| Other fescues <sup>2</sup> ..... | 793   | 1,043 | 384   | 427   | 671   | 624 | 379   | 673   | 307 | 169   |
| Carpet grass.....                | 5     | 15    | 3     | 14    | 7     | 7   | 12    | 17    | 1   | 2     |
| Dallis grass.....                | 29    | 1     | 1     | 16    | 12    | 27  | 38    | 19    | 18  | 6     |
| Rescue grass.....                |       | 3     |       |       |       | 3   | 3     | 5     | 5   | 4     |
| Rhodes grass.....                | 10    | 21    | 10    | 38    | 24    | 16  | 12    | 3     | 3   | 2     |
| Rough-stalked meadow grass.....  | 40    | 75    | 170   | 286   | 306   | 347 | 378   | 554   | 427 | 426   |
| Sudan grass.....                 |       |       |       |       |       | 449 | 79    |       |     | 103   |
| Velvet grass.....                | 6     | 8     | 15    | 11    | 5     | 42  |       |       | 9   |       |
| Wood meadow grass.....           | 23    | 40    | 24    | 39    | 28    | 21  | 13    | 35    | 6   | 9     |
| Small-flowered melilot.....      |       |       |       |       |       | 169 |       |       |     |       |
| Japanese millet.....             |       |       | 2     | 146   | 141   |     |       |       |     |       |
| Redtop.....                      |       | 34    | 3     |       |       | 5   |       |       |     |       |
| Yellow trefoil.....              |       |       |       |       | 2     | 10  | 6     |       | 10  | 2     |
| Yarrow.....                      |       |       |       | 1     | 2     | 1   | 1     | 3     |     | 1     |
| Other forage crop.....           | 7     | 105   | 3     | 31    | 15    | 7   | 10    | 33    | 14  | 2,758 |

<sup>1</sup> In addition to this amount, 15,700 pounds were imported subject to the Federal Seed Act, previous to May 26, 1926.<sup>2</sup> All other fescues except meadow fescue and Chewings fescue.<sup>3</sup> In addition to this amount, 3,200 pounds were imported subject to the Federal Seed Act, previous to May 26, 1926.

Division of Seed Investigations, Bureau of Plant Industry.

TABLE 317.—*Sunflower seed: Production, by States, and imports, average 1924-33, annual 1934-34*

| State                        | Average<br>1924-33 | 1924         | 1925         | 1926         | 1927         | 1928         | 1929         | 1930         | 1931         | 1932         | 1933         | 1934 <sup>1</sup> |
|------------------------------|--------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------------|
|                              | 1,000<br>lb.       | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb.      |
| California.....              | 2,208              | 800          | 1,000        | 1,000        | 3,000        | 4,225        | 4,500        | 250          | 1,700        | 2,800        | 2,800        | 2,700             |
| Illinois.....                | 3,514              | 3,723        | 2,993        | 3,012        | 4,347        | 9,824        | 8,900        | 190          | 1,000        | 850          | 300          | 1,600             |
| Missouri.....                | 2,093              | 3,300        | 3,520        | 3,995        | 3,053        | 2,109        | 2,700        | 450          | 250          | 750          | 800          | 900               |
| Total.....                   | 7,814              | 7,823        | 7,513        | 8,007        | 10,400       | 16,158       | 16,100       | 890          | 2,950        | 4,400        | 3,900        | 5,200             |
| Imports for consumption..... | 805                | 1,089        | 431          | 249          | 987          | 2,300        | 1,621        | 248          | 409          | 598          | 121          | 276               |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics. Production figures compiled from dealers' and growers' reports; imports from Bureau of Foreign and Domestic Commerce, Department of Commerce.

# STATISTICS OF BEEF CATTLE, HOGS, SHEEP, HORSES, AND MULES

TABLE 318.—*Cattle and calves: Number on farms and farm value per head in the United States, Jan. 1, 1900–1935*

| Year                    | All <sup>1</sup> | Other than milk cows |   | Year                    | All <sup>1</sup> | Other than milk cows |   |
|-------------------------|------------------|----------------------|---|-------------------------|------------------|----------------------|---|
|                         |                  | Number <sup>2</sup>  | Farm value per head Jan. 1 <sup>3</sup> |                         |                  | Number <sup>2</sup>  | Farm value per head Jan. 1 <sup>3</sup> |
|                         | <i>Thousands</i> | <i>Thousands</i>     | <i>Dollars</i>                          |                         | <i>Thousands</i> | <i>Thousands</i>     | <i>Dollars</i>                          |
| 1900 <sup>4</sup> ..... | 67,720           | 50,534               | .....                                   | 1919.....               | 70,261           | 49,042               | 41.79                                   |
| 1900.....               | 57,518           | 42,265               | 23.60                                   | 1920 <sup>4</sup> ..... | 68,639           | 46,964               | .....                                   |
| 1901.....               | 60,544           | 45,023               | 18.83                                   | 1920.....               | 70,325           | 48,870               | 40.01                                   |
| 1902.....               | 62,215           | 46,423               | 17.73                                   | 1921.....               | 68,633           | 47,193               | 29.05                                   |
| 1903.....               | 63,788           | 47,715               | 17.44                                   | 1922.....               | 68,603           | 46,841               | 21.89                                   |
| 1904.....               | 64,137           | 47,678               | 15.42                                   | 1923.....               | 67,884           | 45,285               | 23.41                                   |
| 1905.....               | 64,003           | 47,161               | 14.32                                   | 1924.....               | 65,832           | 43,544               | 23.03                                   |
| 1906.....               | 62,872           | 46,595               | 14.98                                   | 1925 <sup>4</sup> ..... | 60,760           | 43,115               | .....                                   |
| 1907.....               | 62,373           | 44,723               | 15.16                                   | 1925.....               | 63,115           | 40,610               | 22.57                                   |
| 1908.....               | 60,794           | 42,857               | 15.96                                   | 1926.....               | 59,977           | 37,666               | 26.40                                   |
| 1909.....               | 59,634           | 41,480               | 16.53                                   | 1927.....               | 57,528           | 35,369               | 28.12                                   |
| 1910 <sup>4</sup> ..... | 61,805           | 41,178               | .....                                   | 1928.....               | 56,701           | 34,572               | 36.30                                   |
| 1910.....               | 57,940           | 39,734               | 18.02                                   | 1929.....               | 57,878           | 35,543               | 42.93                                   |
| 1911.....               | 56,219           | 37,975               | 19.41                                   | 1930 <sup>4</sup> ..... | 63,896           | 43,397               | .....                                   |
| 1912.....               | 55,022           | 36,710               | 20.03                                   | 1930.....               | 59,730           | 36,820               | 40.44                                   |
| 1913.....               | 55,833           | 37,307               | 24.91                                   | 1931.....               | 60,987           | 37,411               | 28.08                                   |
| 1914.....               | 58,737           | 39,807               | 29.42                                   | 1932.....               | 62,656           | 38,181               | 18.32                                   |
| 1915.....               | 62,532           | 43,006               | 31.54                                   | 1933.....               | 65,704           | 40,419               | 14.11                                   |
| 1916.....               | 66,394           | 46,330               | 31.69                                   | 1934.....               | 68,290           | 42,105               | 12.77                                   |
| 1917.....               | 69,533           | 48,992               | 33.91                                   | 1935 <sup>4</sup> ..... | 60,667           | 35,567               | 14.50                                   |
| 1918.....               | 71,229           | 50,208               | 38.63                                   |                         |                  |                      |   |

<sup>1</sup> Figures for 1900–1919 are tentative revised estimates of the Bureau of Agricultural Economics.

<sup>2</sup> Obtained by subtracting the estimates of "milk cows on farms" shown in table 379 from the estimates of "all cattle on farms" shown in this table.

<sup>3</sup> Data for 1900–1925 are an old series adjusted on basis average relationship between the old and new series for 1926–28. Old series was weighted averages of prices by age groups only and was shown in 1928 Yearbook. The conversion factor was 0.9466 (base is old series). Data for 1926–35 are a new series, referred to above, of average values by age and sex classification, weighted by numbers in each class.

<sup>4</sup> Italic figures are from the census. Census dates were June 1, 1900; Apr. 15, 1910; Jan. 1, 1920 and 1925; Apr. 1, 1930. 1900, 1910, and 1930 include spring-born calves.

<sup>5</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board

TABLE 319.—*Cattle and calves, including cows and heifers kept for milk: Number on farms and farm value per head, by States, Jan. 1, 1932-35*

| State and division      | Number       |              |              |                   | Farm value per head <sup>1</sup> |                |                |                |
|-------------------------|--------------|--------------|--------------|-------------------|----------------------------------|----------------|----------------|----------------|
|                         | 1932         | 1933         | 1934         | 1935 <sup>2</sup> | 1932                             | 1933           | 1934           | 1935           |
|                         | <i>Thou-</i> | <i>Thou-</i> | <i>Thou-</i> | <i>Thou-</i>      | <i>Dollars</i>                   | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> |
|                         | <i>sands</i> | <i>sands</i> | <i>sands</i> | <i>sands</i>      |                                  |                |                |                |
| Maine.....              | 249          | 251          | 254          | 245               | 37.10                            | 26.50          | 24.20          | 27.40          |
| New Hampshire.....      | 131          | 131          | 132          | 129               | 45.00                            | 34.00          | 30.10          | 35.70          |
| Vermont.....            | 435          | 446          | 416          | 396               | 40.60                            | 31.00          | 29.50          | 33.60          |
| Massachusetts.....      | 186          | 179          | 183          | 186               | 69.50                            | 50.90          | 51.00          | 54.50          |
| Rhode Island.....       | 29           | 29           | 30           | 28                | 71.20                            | 54.50          | 54.70          | 67.70          |
| Connecticut.....        | 159          | 159          | 160          | 158               | 66.50                            | 49.00          | 49.90          | 57.40          |
| New York.....           | 1,968        | 2,042        | 2,049        | 1,968             | 49.50                            | 39.10          | 40.60          | 43.80          |
| New Jersey.....         | 163          | 170          | 177          | 184               | 73.50                            | 51.10          | 61.20          | 68.30          |
| Pennsylvania.....       | 1,398        | 1,412        | 1,440        | 1,454             | 47.20                            | 33.20          | 34.60          | 35.90          |
| North Atlantic.....     | 4,736        | 4,819        | 4,841        | 4,748             | 49.56                            | 37.10          | 38.26          | 41.36          |
| Ohio.....               | 1,610        | 1,674        | 1,708        | 1,637             | 34.60                            | 25.10          | 22.50          | 24.90          |
| Indiana.....            | 1,428        | 1,455        | 1,515        | 1,485             | 30.50                            | 22.80          | 20.00          | 25.10          |
| Illinois.....           | 2,361        | 2,525        | 2,525        | 2,399             | 31.80                            | 24.00          | 22.20          | 26.60          |
| Michigan.....           | 1,390        | 1,418        | 1,461        | 1,403             | 34.80                            | 25.80          | 23.40          | 27.20          |
| Wisconsin.....          | 3,213        | 3,198        | 3,230        | 3,036             | 34.40                            | 24.20          | 22.90          | 27.40          |
| East North Central..... | 10,002       | 10,300       | 10,439       | 9,980             | 33.32                            | 24.31          | 22.31          | 26.43          |
| Minnesota.....          | 3,246        | 3,408        | 3,511        | 3,060             | 25.60                            | 18.30          | 17.00          | 19.60          |
| Iowa.....               | 4,200        | 4,284        | 4,498        | 4,228             | 26.70                            | 20.60          | 19.50          | 20.50          |
| Missouri.....           | 2,660        | 2,735        | 2,770        | 2,271             | 23.80                            | 18.40          | 15.50          | 18.20          |
| North Dakota.....       | 1,566        | 1,750        | 1,835        | 1,157             | 22.30                            | 16.60          | 13.80          | 17.80          |
| South Dakota.....       | 1,925        | 2,214        | 2,214        | 1,506             | 22.00                            | 17.00          | 14.40          | 16.50          |
| Nebraska.....           | 3,138        | 3,323        | 3,592        | 2,694             | 24.20                            | 18.80          | 18.00          | 18.70          |
| Kansas.....             | 3,298        | 3,463        | 3,671        | 3,084             | 22.00                            | 17.20          | 16.20          | 16.80          |
| West North Central..... | 20,033       | 21,180       | 22,091       | 18,030            | 24.17                            | 18.39          | 16.63          | 18.66          |
| North Central.....      | 30,035       | 31,480       | 32,530       | 28,010            | 27.22                            | 20.33          | 18.45          | 21.43          |
| Delaware.....           | 49           | 50           | 49           | 50                | 46.20                            | 30.90          | 35.20          | 35.00          |
| Maryland.....           | 277          | 282          | 285          | 288               | 41.20                            | 29.00          | 29.60          | 32.50          |
| Virginia.....           | 792          | 800          | 800          | 776               | 27.80                            | 21.20          | 20.30          | 22.70          |
| West Virginia.....      | 510          | 536          | 557          | 530               | 28.50                            | 22.40          | 20.20          | 21.30          |
| North Carolina.....     | 551          | 588          | 606          | 606               | 27.20                            | 20.60          | 19.70          | 21.50          |
| South Carolina.....     | 274          | 290          | 290          | 290               | 23.70                            | 19.50          | 20.10          | 20.20          |
| Georgia.....            | 311          | 352          | 394          | 394               | 16.50                            | 12.30          | 13.00          | 13.50          |
| Florida.....            | 458          | 480          | 494          | 522               | 17.90                            | 14.00          | 14.80          | 15.50          |
| South Atlantic.....     | 3,722        | 3,878        | 3,975        | 3,956             | 25.06                            | 19.00          | 18.73          | 19.99          |
| Kentucky.....           | 1,040        | 1,071        | 1,115        | 1,137             | 23.20                            | 18.00          | 16.30          | 18.80          |
| Tennessee.....          | 1,032        | 1,094        | 1,116        | 1,071             | 20.50                            | 15.30          | 14.30          | 16.00          |
| Alabama.....            | 810          | 875          | 901          | 910               | 15.80                            | 11.80          | 12.30          | 13.10          |
| Mississippi.....        | 993          | 1,052        | 1,094        | 1,094             | 14.40                            | 10.20          | 10.30          | 11.10          |
| Arkansas.....           | 848          | 915          | 960          | 883               | 16.30                            | 12.70          | 10.70          | 11.00          |
| Louisiana.....          | 740          | 784          | 839          | 872               | 18.20                            | 13.10          | 13.60          | 14.70          |
| Oklahoma.....           | 2,131        | 2,280        | 2,462        | 2,142             | 18.50                            | 14.10          | 11.40          | 13.30          |
| Texas.....              | 6,127        | 6,495        | 6,740        | 5,362             | 17.40                            | 13.40          | 11.70          | 13.60          |
| South Central.....      | 13,721       | 14,566       | 15,227       | 13,501            | 17.94                            | 13.61          | 12.15          | 13.84          |
| Montana.....            | 1,276        | 1,416        | 1,543        | 1,250             | 24.00                            | 20.90          | 17.20          | 18.30          |
| Idaho.....              | 661          | 701          | 736          | 714               | 24.70                            | 19.50          | 15.90          | 18.10          |
| Wyoming.....            | 863          | 930          | 1,023        | 800               | 24.50                            | 19.90          | 16.20          | 17.20          |
| Colorado.....           | 1,626        | 1,557        | 1,713        | 1,439             | 22.50                            | 16.10          | 14.50          | 16.40          |
| New Mexico.....         | 1,144        | 1,280        | 1,445        | 1,050             | 21.80                            | 15.10          | 14.20          | 15.80          |
| Arizona.....            | 851          | 894          | 930          | 930               | 22.30                            | 16.50          | 15.10          | 16.00          |
| Utah.....               | 475          | 460          | 474          | 403               | 22.70                            | 19.70          | 17.10          | 17.60          |
| Nevada.....             | 310          | 316          | 332          | 325               | 25.70                            | 20.80          | 18.90          | 20.90          |
| Washington.....         | 615          | 640          | 659          | 679               | 37.00                            | 25.50          | 19.90          | 26.00          |
| Oregon.....             | 795          | 835          | 877          | 877               | 29.80                            | 21.10          | 15.90          | 24.10          |
| California.....         | 1,926        | 1,926        | 1,985        | 1,985             | 33.60                            | 25.50          | 22.70          | 29.30          |
| Western.....            | 10,442       | 10,961       | 11,717       | 10,452            | 26.45                            | 20.03          | 17.29          | 20.65          |
| United States.....      | 62,656       | 65,704       | 68,290       | 60,667            | 26.62                            | 19.94          | 18.27          | 21.07          |

<sup>1</sup> Sum of total value of subgroups (classified by age and sex) divided by total number and rounded to nearest dime for States. Division and United States averages not rounded. State figures are new weighted value series, not comparable to State figures previously published for the years prior to 1925.

<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 320.—*Cattle: Number in countries having 150,000 or over, averages 1921-25 and 1926-30, annual 1930-33*

| Country  | Date or month of estimate    | Average                  |                          | 1930                     | 1931                     | 1932                     | 1933                     |
|--|------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|  |                              | 1921-25 <sup>1</sup>     | 1926-30 <sup>1</sup>     |                          |                          |                          |                          |
| NORTH AMERICA, CENTRAL AMERICA, AND WEST INDIES                                    |                              |                          |                          |                          |                          |                          |                          |
| United States.....   | January 1.....               | Thou-<br>sands<br>66,725 | Thou-<br>sands<br>58,363 | Thou-<br>sands<br>59,730 | Thou-<br>sands<br>60,987 | Thou-<br>sands<br>62,656 | Thou-<br>sands<br>65,704 |
| Canada.....  | June.....                    | 9,588                    | 8,860                    | 8,937                    | 7,991                    | 8,511                    | 8,576                    |
| Mexico.....  | do.....                      | <sup>2</sup> 2,492       | <sup>3</sup> 7,834       | <sup>4</sup> 10,083      |                          |                          |                          |
| Guatemala.....   | July.....                    | 268                      | 397                      | 416                      | 387                      | 369                      |                          |
| Honduras.....  |                              | <sup>5</sup> 466         | (517)                    | 517                      |                          |                          |                          |
| Salvador.....  |                              | (340)                    | (328)                    | <sup>4</sup> 328         |                          |                          |                          |
| Nicaragua.....   |                              | <sup>6</sup> 1,200       | (1,200)                  |                          |                          |                          |                          |
| Costa Rica.....  |                              | 435                      |                          | <sup>7</sup> 399         |                          |                          |                          |
| Cuba.....  | January 1 <sup>8</sup> ..... | 4,841                    | 4,496                    | 4,845                    | 4,339                    |                          | 4,448                    |
| Dominican Republic.....  | May.....                     | 679                      | 694                      | 900                      |                          |                          |                          |
| Puerto Rico.....   |                              | 279                      | <sup>4</sup> 811         | <sup>4</sup> 311         |                          |                          |                          |
| Estimated total <sup>9</sup> .....   |                              | 87,900                   | 84,000                   |                          |                          |                          |                          |
| SOUTH AMERICA  |                              |                          |                          |                          |                          |                          |                          |
| Colombia.....  |                              | 7,468                    | 6,857                    | 7,343                    | 8,000                    |                          |                          |
| Venezuela.....   |                              | 2,689                    | <sup>6</sup> 3,000       | <sup>6</sup> 3,000       |                          |                          |                          |
| British Guiana.....  |                              | 117                      | 148                      | 155                      | 181                      | 186                      |                          |
| Ecuador.....   |                              | <sup>6</sup> 1,500       | 1,282                    |                          | 1,290                    |                          |                          |
| Peru.....  | February.....                | 1,198                    | <sup>4</sup> 1,806       | <sup>7</sup> 1,806       |                          |                          |                          |
| Bolivia.....   |                              | 2,145                    | 1,918                    | 2,050                    | 2,064                    |                          |                          |
| Chile.....   |                              | 1,957                    | 2,153                    | <sup>4</sup> 2,388       |                          |                          |                          |
| Brazil <sup>10</sup> .....   | September.....               | <sup>11</sup> 34,271     | (47,492)                 |                          | <sup>4</sup> 2,388       |                          |                          |
| Uruguay.....   | March-April.....             | <sup>4</sup> 8,432       | <sup>4</sup> 7,128       | <sup>4</sup> 7,128       | 47,492                   | 7,372                    | <sup>6</sup> 7,200       |
| Paraguay.....  | January 1 <sup>8</sup> ..... | 4,600                    | (4,500)                  | <sup>6</sup> 4,000       | <sup>6</sup> 4,000       | <sup>6</sup> 4,000       | <sup>6</sup> 4,000       |
| Argentina.....   | do. <sup>8</sup> .....       | <sup>4</sup> 37,065      | <sup>12</sup> 32,212     | <sup>12</sup> 32,212     |                          |                          |                          |
| Estimated total <sup>9</sup> .....   |                              | 101,500                  | 108,500                  |                          |                          |                          |                          |
| EUROPE   |                              |                          |                          |                          |                          |                          |                          |
| England and Wales.....   | June.....                    | 5,824                    | 6,072                    | 5,850                    | 6,065                    | 6,358                    | 6,620                    |
| Scotland.....  | do.....                      | 1,171                    | 1,218                    | 1,233                    | 1,209                    | 1,233                    | 1,279                    |
| Northern Ireland.....  | do.....                      | 748                      | 695                      | 673                      | 681                      | 715                      | 734                      |
| Irish Free State.....  | do.....                      | 4,266                    | 4,059                    | 4,038                    | 4,029                    | 4,025                    | 4,137                    |
| Norway <sup>12</sup> .....   | do.....                      | 1,128                    | 1,221                    | 1,251                    | 1,310                    | 1,342                    | 1,340                    |
| Sweden.....  | June-July.....               | <sup>4</sup> 2,736       | 2,980                    | 3,060                    | 3,109                    | 3,120                    | 3,086                    |
| Denmark.....   | July.....                    | 2,613                    | 2,981                    | 3,057                    | 3,208                    | 3,237                    | 3,134                    |
| Netherlands.....   | May-July.....                | <sup>4</sup> 2,063       | <sup>4</sup> 2,366       | <sup>4</sup> 2,366       |                          |                          | 2,877                    |
| Belgium.....   | January 1 <sup>8</sup> ..... | 1,550                    | 1,719                    | 1,738                    | 1,759                    | 1,768                    | 1,784                    |
| France.....  | do. <sup>8</sup> .....       | 13,582                   | 14,886                   | 15,631                   | 15,467                   | 15,434                   | 15,643                   |
| Spain.....   | do. <sup>8</sup> .....       | 3,457                    | 3,714                    | (3,657)                  | (3,655)                  | 3,654                    |                          |
| Portugal.....  |                              | 797                      | <sup>4</sup> 853         |                          |                          |                          |                          |
| Italy <sup>10</sup> .....  | March-April.....             | 6,812                    | <sup>4</sup> 7,108       | <sup>4</sup> 7,108       |                          |                          |                          |
| Switzerland.....   | April.....                   | <sup>4</sup> 1,425       | 1,598                    |                          | 1,609                    |                          | 1,684                    |
| Germany.....   | January 1 <sup>8</sup> ..... | 16,786                   | 17,776                   | 18,033                   | 18,470                   | 19,124                   | 19,139                   |
| Austria.....   | January-April.....           | 2,241                    | <sup>4</sup> 2,313       | <sup>4</sup> 2,313       |                          |                          |                          |
| Czechoslovakia <sup>10</sup> .....   | January 1 <sup>8</sup> ..... | 4,377                    | 4,693                    | <sup>14</sup> 4,540      | 4,459                    | 4,451                    | 4,341                    |
| Hungary.....   | April.....                   | 1,809                    | 1,814                    | 1,785                    | 1,814                    | 1,819                    | 1,697                    |
| Yugoslavia <sup>10</sup> .....   | January 1 <sup>8</sup> ..... | 4,204                    | 3,749                    | 3,765                    | 3,850                    | 3,912                    | 3,851                    |
| Greece <sup>10</sup> .....   | do. <sup>8</sup> .....       | 742                      | 926                      | 874                      | 881                      | 913                      | 921                      |
| Bulgaria <sup>10</sup> .....   | do. <sup>8</sup> .....       | 1,928                    | 2,266                    |                          |                          |                          |                          |
| Rumania <sup>10</sup> .....  | do. <sup>8</sup> .....       | 5,570                    | 4,820                    | 4,521                    | <sup>15</sup> 4,150      | 4,269                    | 4,382                    |
| Poland.....  | June.....                    | <sup>10</sup> 8,083      | 9,019                    | 9,400                    | 9,786                    | 9,461                    | 8,985                    |
| Lithuania.....   | January 1 <sup>8</sup> ..... | 1,149                    | 1,245                    | 1,160                    | 1,034                    | 1,121                    | 1,154                    |
| Latvia.....  | June.....                    | 887                      | 977                      | 1,026                    | 1,117                    | 1,153                    | 1,156                    |
| Estonia.....   | July.....                    | 508                      | 623                      | 627                      | 669                      | 692                      | 682                      |
| Finland.....   | September.....               | 1,847                    | 1,841                    | 1,810                    | 1,822                    | 1,806                    |                          |
| Union of Soviet Socialist Republics.....   |                              | 54,120                   | 64,900                   | 52,500                   | 47,900                   | 40,700                   | 38,400                   |
| Estimated total, excluding Union of Soviet Socialist Republics. <sup>9</sup> ..... |                              | 98,400                   | 103,700                  |                          |                          |                          |                          |
| AFRICA   |                              |                          |                          |                          |                          |                          |                          |
| Ethiopia.....  |                              | (4,000)                  | (4,000)                  |                          |                          |                          |                          |
| Morocco.....   |                              | 1,711                    | 1,971                    | 2,092                    | 1,909                    | 1,954                    |                          |
| Algeria.....   | September.....               | 853                      | 903                      | 938                      |                          | 893                      | 896                      |
| Tunis.....   | January 1 <sup>8</sup> ..... | 459                      | 464                      | 498                      | 502                      | 540                      | 543                      |
| French West Africa.....  |                              | 2,165                    | 2,536                    | 2,788                    | 2,779                    | 2,773                    |                          |
| French Sudan.....  |                              | 1,086                    | 1,025                    | 1,139                    | 1,400                    | 1,147                    |                          |
| Nigeria and British Cameroons.....   |                              | 2,906                    | 3,117                    | 3,118                    | 3,056                    | 2,762                    |                          |
| French Cameroons.....  |                              | 354                      | 412                      | 504                      | 504                      | 504                      |                          |
| Egypt <sup>10</sup> .....  | September.....               | 1,310                    | 1,551                    | 1,572                    | 1,614                    | 1,791                    | 1,769                    |
| Anglo-Egyptian Sudan.....  |                              | 864                      | 1,461                    | 1,300                    | 1,200                    | 1,250                    |                          |
| Italian Somaliland.....  | February.....                | <sup>11</sup> 1,246      | 1,110                    | 1,113                    |                          |                          |                          |
| Eritrea.....   |                              | 553                      | <sup>4</sup> 749         |                          |                          |                          |                          |
| Kenya.....   | March-June.....              | 3,038                    | 3,812                    | 5,193                    |                          |                          |                          |
| Uganda.....  | January 1 <sup>8</sup> ..... | 1,109                    | 1,605                    | 1,910                    | 1,985                    | 2,065                    | 2,152                    |
| French Equatorial Africa.....  |                              | 815                      | 1,278                    | 1,456                    | <sup>6</sup> 1,504       |                          |                          |
| Belgian Congo.....   |                              | 495                      | 303                      | 299                      | 312                      | 318                      |                          |
| Ruanda.....  |                              | 700                      | 887                      | 936                      | 831                      | 763                      |                          |
| Angola.....  |                              | 524                      | 1,073                    | 1,480                    | 1,570                    |                          |                          |

See footnotes at end of table.

TABLE 320.—*Cattle: Number in countries having 150,000 or over, averages 1921-25 and 1926-30, annual 1930-33—Continued*

| Country  | Date or month of estimate    | Average              |                      | 1930                 | 1931           | 1932           | 1933                 |
|--|------------------------------|----------------------|----------------------|----------------------|----------------|----------------|----------------------|
|  |                              | 1921-25 <sup>1</sup> | 1926-30 <sup>1</sup> |                      |                |                |                      |
| AFRICA—continued   |                              | Thou-<br>sands       | Thou-<br>sands       | Thou-<br>sands       | Thou-<br>sands | Thou-<br>sands | Thou-<br>sands       |
| Southwest Africa.....  | .....                        | 561                  | 643                  | 655                  | 645            | 725            | 628                  |
| Bechuanaland.....  | January 1.....               | 482                  | 602                  | 630                  | 641            | 642            | 777                  |
| Union of South Africa.....   | August.....                  | 9,459                | 10,640               | 10,751               | .....          | .....          | .....                |
| Basutoland.....  | .....                        | 604                  | 653                  | 649                  | 600            | 550            | 550                  |
| Rhodesia:  | .....                        | .....                | .....                | .....                | .....          | .....          | .....                |
| Northern.....  | January 1 <sup>5</sup> ..... | 289                  | 415                  | 473                  | 466            | 452            | .....                |
| Southern.....  | do. <sup>5</sup> .....       | 1,794                | 2,268                | 2,398                | 2,468          | 2,582          | 2,747                |
| Swaziland.....   | do. <sup>5</sup> .....       | 244                  | 316                  | 380                  | 334            | 372            | 319                  |
| Tanganyika Territory.....  | do. <sup>5</sup> .....       | 3,806                | 4,823                | 5,170                | 5,099          | 5,336          | .....                |
| Nyasaland.....   | March 31.....                | 120                  | 151                  | 171                  | 175            | 183            | .....                |
| Mozambique.....  | .....                        | 342                  | 446                  | 491                  | 517            | 519            | .....                |
| Madagascar.....  | February.....                | 7,708                | 6,952                | 6,705                | 6,760          | 6,575          | .....                |
| Estimated total <sup>2</sup> .....   | .....                        | 50,000               | 56,700               | .....                | .....          | .....          | .....                |
| ASIA   |                              | .....                | .....                | .....                | .....          | .....          | .....                |
| Turkey, European and Asiatic <sup>10</sup> .....                                   | .....                        | <sup>17</sup> 5,060  | 5,464                | 5,243                | 5,363          | 5,870          | 5,664                |
| Iran.....  | .....                        | <sup>6</sup> 1,000   | (1,000)              | .....                | 1,622          | .....          | .....                |
| Syria and Lebanon.....   | .....                        | 257                  | 300                  | 391                  | 426            | 486            | .....                |
| India: <sup>10</sup>   | .....                        | .....                | .....                | .....                | .....          | .....          | .....                |
| British.....   | December-April.....          | 146,759              | 151,847              | <sup>4</sup> 154,629 | 152,868        | 152,762        | .....                |
| Native States.....   | .....                        | 33,982               | 36,421               | <sup>4</sup> 47,104  | 47,591         | .....          | .....                |
| Ceylon <sup>10</sup> .....   | January 1 <sup>8</sup> ..... | 1,459                | 1,570                | 1,650                | 1,660          | 1,580          | 1,580                |
| China, including Turkistan, Manchuria, and Inner Mongolia.....                     | .....                        | <sup>15</sup> 19,000 | <sup>19</sup> 23,000 | .....                | .....          | .....          | <sup>19</sup> 23,000 |
| Japan.....   | January 1 <sup>8</sup> ..... | 1,440                | 1,474                | 1,488                | 1,498          | 1,512          | 1,529                |
| Chosen.....  | do. <sup>8</sup> .....       | 1,567                | 1,586                | 1,586                | 1,612          | 1,637          | 1,664                |
| Taiwan <sup>10</sup> .....   | do. <sup>8</sup> .....       | 407                  | 385                  | 390                  | 391            | 383            | 387                  |
| French Indo-China <sup>10</sup> .....  | .....                        | 3,600                | 3,896                | 3,919                | 3,913          | 3,917          | .....                |
| Siam <sup>10</sup> .....   | March.....                   | 6,701                | 8,783                | 9,153                | 9,513          | 9,867          | .....                |
| Philippine Islands <sup>10</sup> .....   | January 1 <sup>8</sup> ..... | 2,393                | 2,909                | 3,110                | 3,249          | 3,432          | .....                |
| Netherlands Indies:  | .....                        | .....                | .....                | .....                | .....          | .....          | .....                |
| Java and Madura <sup>10</sup> .....  | do. <sup>8</sup> .....       | 5,287                | 5,708                | 5,700                | 5,768          | 6,014          | 6,321                |
| Outer possessions <sup>10</sup> .....  | do. <sup>8</sup> .....       | 1,872                | 1,994                | 2,049                | 2,064          | 2,069          | 2,065                |
| Estimated total, excluding Union of Soviet Socialist Republics. <sup>9</sup>       | .....                        | 232,600              | 248,200              | .....                | .....          | .....          | .....                |
| OCEANIA  |                              | .....                | .....                | .....                | .....          | .....          | .....                |
| Australia.....   | January 1 <sup>8</sup> ..... | 13,789               | 11,873               | 11,202               | 11,721         | 12,260         | 12,783               |
| New Zealand.....   | January 31.....              | 3,393                | 3,439                | 3,766                | 4,081          | 4,072          | 4,192                |
| Estimated total <sup>9</sup> .....   | .....                        | 17,400               | 15,500               | .....                | .....          | .....          | .....                |
| Total countries reporting all periods:   | .....                        | .....                | .....                | .....                | .....          | .....          | .....                |
| To 1932 (63) <sup>20</sup> .....   | .....                        | 442,421              | 458,928              | 452,559              | 448,795        | 446,586        | .....                |
| To 1933 (41) <sup>20</sup> .....   | .....                        | 254,473              | 260,594              | 250,133              | 247,773        | 245,571        | 247,586              |
| Estimated world total including Union of Soviet Socialist Republics. <sup>21</sup> | .....                        | 641,900              | 681,500              | .....                | .....          | .....          | .....                |

<sup>1</sup> Average for 5-year period if available, otherwise for any year or years within this period except as otherwise stated.

<sup>2</sup> Incomplete.

<sup>3</sup> Average for 1926 estimate for 93 percent of municipalities and the final figures of the Apr. 26, 1930, census. This census is the first complete census of numbers in Mexico and is therefore not strictly comparable with earlier estimates.

<sup>4</sup> Census.

<sup>5</sup> Year 1918.

<sup>6</sup> Unofficial.

<sup>7</sup> Year 1929.

<sup>8</sup> Countries reporting as of December have been considered as of Jan. 1 of following year.

<sup>9</sup> These totals include interpolations for a few countries not reporting each year and rough estimates for some others.

<sup>10</sup> Buffaloes included.

<sup>11</sup> Year 1920.

<sup>12</sup> Census June.

<sup>13</sup> In rural communities only.

<sup>14</sup> Census figures for May 27.

<sup>15</sup> Estimate of total number based on number in rural communities only as compared with preceding year.

<sup>16</sup> November.

<sup>17</sup> Included unofficial estimate of 690,000 buffaloes.

<sup>18</sup> Estimate based on official figures in 1920 for 20 Provinces, which supported 63 percent of the cattle in China in 1914. No data available in 1920 for such important Provinces as Hupeh with 1,898,000 in 1914, Hunan with 2,192,000, Szechuan with 3,006,114, Kwantung with 2,238,000, and Kwangsi with 1,527,000.

<sup>19</sup> Estimate based on official figures in 1932 or 1933 for 22 Provinces, which supported 97 percent of the cattle in China in 1914. The official estimate excluding Turkistan and Inner Mongolia for 1932 or 1933 was 22,363,000. Estimates for this territory and for Manchuria included with China in this table.

<sup>20</sup> Comparable totals for number of countries indicated.

<sup>21</sup> Estimated totals for continents are as follows in millions of head for the 5-year average, 1909-13: North America, Central America, and West Indies, 74.9; South America, 80.3; Europe, excluding Union of Soviet Socialist Republics, 103.3; Africa, 33.8; Asia, excluding Union of Soviet Socialist Republics, 195.3; Oceania, 13.8; world including Union of Soviet Socialist Republics, 562.0.

Bureau of Agricultural Economics; compiled from reports of United States Government representatives abroad, original official sources, and the International Institute of Agriculture unless otherwise stated.

Figures in parentheses interpolated. For later figures for individual countries see Cattle and Beef Issue of Foreign Crops and Markets.



TABLE 321.—*Cattle and calves: Receipts at principal public stockyards and a public stockyards, 1925-34*

## CATTLE

| Year                    | Chi-<br>cago           | Den-<br>ver            | East<br>St.<br>Louis   | Fort<br>Worth          | Kan-<br>sas<br>City    | Omaha                  | South<br>St.<br>Joseph | South<br>St.<br>Paul   | Sioux<br>City          | Total<br>9 mar-<br>kets <sup>1</sup> | All<br>other<br>stock-<br>yards<br>report-<br>ing | Total<br>all<br>stock-<br>yards<br>report-<br>ing <sup>1</sup> |
|-------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|--------------------------------------|---|--|
|                         | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i>               | <i>Thou-<br/>sands</i>                            | <i>Thou-<br/>sands</i>   |
| 1925.....               | 3, 023                 | 527                    | 1, 038                 | 1, 060                 | 2, 409                 | 1, 693                 | 609                    | 985                    | 845                    | 12, 098                              | 5, 019  | 17, 117  |
| 1926.....               | 3, 257                 | 473                    | 1, 074                 | 944                    | 2, 183                 | 1, 692                 | 563                    | 1, 180                 | 885                    | 12, 251                              | 4, 783  | 17, 034  |
| 1927.....               | 2, 872                 | 577                    | 1, 004                 | 956                    | 2, 070                 | 1, 463                 | 541                    | 955                    | 747                    | 11, 186                              | 5, 072  | 16, 258  |
| 1928.....               | 2, 505                 | 590                    | 900                    | 886                    | 1, 859                 | 1, 423                 | 511                    | 917                    | 750                    | 10, 342                              | 4, 847  | 15, 189  |
| 1929.....               | 2, 388                 | 556                    | 832                    | 762                    | 1, 836                 | 1, 444                 | 500                    | 879                    | 778                    | 9, 974                               | 4, 363  | 14, 337  |
| 1930.....               | 2, 239                 | 505                    | 820                    | 638                    | 1, 802                 | 1, 485                 | 459                    | 779                    | 774                    | 9, 501                               | 4, 297  | 13, 798  |
| 1931.....               | 2, 287                 | 440                    | 792                    | 598                    | 1, 665                 | 1, 570                 | 433                    | 811                    | 769                    | 9, 364                               | 4, 122  | 13, 486  |
| 1932.....               | 2, 006                 | 365                    | 709                    | 444                    | 1, 570                 | 1, 333                 | 360                    | 690                    | 545                    | 8, 022                               | 3, 809  | 11, 831  |
| 1933.....               | 2, 067                 | 348                    | 727                    | 417                    | 1, 443                 | 1, 417                 | 399                    | 835                    | 774                    | 8, 427                               | 3, 920  | 12, 347  |
| 1934 <sup>1</sup> ..... | 2, 727                 | 633                    | 1, 225                 | 757                    | 2, 256                 | 1, 971                 | 650                    | 1, 476                 | 1, 184                 | 12, 879                              | 6, 800  | 19, 679  |

## CALVES

|                         |     |     |     |     |     |     |     |     |     |        |        |        |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|--------|--------|
| 1925.....               | 848 | 60  | 406 | 310 | 549 | 110 | 125 | 641 | 52  | 3, 108 | 3, 842 | 6, 950 |
| 1926.....               | 755 | 56  | 452 | 241 | 433 | 123 | 116 | 730 | 84  | 2, 991 | 3, 846 | 6, 837 |
| 1927.....               | 710 | 63  | 444 | 330 | 400 | 98  | 99  | 627 | 62  | 2, 334 | 3, 671 | 6, 505 |
| 1928.....               | 762 | 77  | 415 | 325 | 351 | 94  | 87  | 573 | 63  | 2, 746 | 3, 543 | 6, 289 |
| 1929.....               | 672 | 65  | 391 | 327 | 342 | 102 | 89  | 546 | 61  | 2, 601 | 3, 502 | 6, 103 |
| 1930.....               | 557 | 88  | 383 | 331 | 364 | 120 | 100 | 559 | 82  | 2, 586 | 3, 782 | 6, 368 |
| 1931.....               | 547 | 64  | 379 | 243 | 292 | 120 | 76  | 603 | 82  | 2, 400 | 3, 723 | 6, 129 |
| 1932.....               | 447 | 59  | 350 | 209 | 284 | 120 | 77  | 544 | 49  | 2, 145 | 3, 356 | 5, 501 |
| 1933.....               | 440 | 71  | 392 | 223 | 276 | 120 | 84  | 515 | 56  | 2, 178 | 3, 409 | 5, 587 |
| 1934 <sup>1</sup> ..... | 737 | 132 | 590 | 381 | 594 | 278 | 144 | 840 | 222 | 3, 920 | 4, 170 | 8, 090 |

<sup>1</sup> Rounded totals of the complete figures.<sup>2</sup> Includes purchases for Federal Surplus Relief Corporation from June 6 to Dec. 31.

Bureau of Agricultural Economics; compiled from data of the livestock and meat reporting service of the Bureau.

Receipts, 1915-24 are available in 1927 Yearbook, table 337.

TABLE 322.—*Cattle and calves: Receipts and stocker and feeder shipments at United States public stockyards, 1925-34*

## RECEIPTS, CATTLE

| Year                   | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | July         | Aug.         | Sept.        | Oct.         | Nov.         | Dec.         | Total        |
|------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                        | <i>Thou-</i> | <i>sands</i> | <i>Thou-</i> | <i>sands</i> | <i>Thou-</i> | <i>sands</i> | <i>Thou-</i> | <i>sands</i> | <i>Thou-</i> | <i>sands</i> | <i>Thou-</i> | <i>sands</i> | <i>Thou-</i> |
| 1925----               | 1,353        | 1,056        | 1,273        | 1,201        | 1,139        | 1,160        | 1,398        | 1,632        | 1,592        | 2,126        | 1,717        | 1,470        | 17,117       |
| 1926----               | 1,314        | 1,065        | 1,233        | 1,146        | 1,277        | 1,279        | 1,279        | 1,421        | 1,827        | 2,030        | 1,836        | 1,327        | 17,034       |
| 1927----               | 1,327        | 1,080        | 1,172        | 1,107        | 1,348        | 1,185        | 1,089        | 1,494        | 1,482        | 2,008        | 1,749        | 1,217        | 16,258       |
| 1928----               | 1,272        | 1,045        | 966          | 1,119        | 1,188        | 1,057        | 1,158        | 1,308        | 1,669        | 1,913        | 1,419        | 1,075        | 15,189       |
| 1929----               | 1,160        | 814          | 953          | 1,146        | 1,097        | 977          | 1,166        | 1,156        | 1,572        | 1,787        | 1,405        | 1,104        | 14,837       |
| 1930----               | 1,155        | 908          | 1,045        | 1,066        | 984          | 996          | 1,012        | 1,062        | 1,511        | 1,677        | 1,180        | 1,202        | 13,798       |
| 1931----               | 1,040        | 878          | 1,017        | 1,057        | 1,027        | 1,017        | 1,035        | 1,302        | 1,279        | 1,531        | 1,312        | 991          | 13,486       |
| 1932----               | 960          | 869          | 897          | 897          | 919          | 870          | 888          | 1,125        | 1,232        | 1,346        | 1,039        | 789          | 11,831       |
| 1933----               | 908          | 773          | 758          | 843          | 1,030        | 985          | 1,008        | 1,173        | 1,178        | 1,587        | 1,203        | 901          | 12,347       |
| 1934 <sup>1</sup> ---- | 1,145        | 958          | 969          | 1,053        | 1,192        | 1,215        | 2,129        | 3,097        | 2,822        | 2,222        | 1,598        | 1,279        | 19,679       |

## RECEIPTS, CALVES

|                        |     |     |     |     |     |     |     |       |     |     |     |     |       |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-------|-----|-----|-----|-----|-------|
| 1925----               | 516 | 473 | 588 | 626 | 597 | 586 | 572 | 612   | 566 | 663 | 565 | 586 | 6,950 |
| 1926----               | 526 | 486 | 578 | 564 | 616 | 592 | 541 | 576   | 570 | 644 | 625 | 519 | 6,537 |
| 1927----               | 504 | 476 | 571 | 567 | 607 | 547 | 457 | 571   | 507 | 627 | 598 | 473 | 6,505 |
| 1928----               | 499 | 471 | 499 | 566 | 610 | 501 | 492 | 521   | 522 | 629 | 544 | 435 | 6,289 |
| 1929----               | 479 | 381 | 497 | 606 | 563 | 475 | 499 | 463   | 531 | 620 | 538 | 451 | 6,103 |
| 1930----               | 434 | 418 | 502 | 578 | 533 | 464 | 490 | 543   | 596 | 700 | 517 | 534 | 6,368 |
| 1931----               | 463 | 425 | 518 | 560 | 524 | 522 | 453 | 519   | 518 | 606 | 554 | 482 | 6,129 |
| 1932----               | 416 | 414 | 480 | 478 | 478 | 468 | 403 | 481   | 457 | 550 | 504 | 372 | 5,501 |
| 1933----               | 416 | 364 | 413 | 453 | 523 | 465 | 448 | 496   | 474 | 592 | 496 | 442 | 5,587 |
| 1934 <sup>1</sup> ---- | 508 | 449 | 530 | 538 | 617 | 597 | 856 | 1,178 | 956 | 778 | 565 | 518 | 8,090 |

## STOCKER AND FEEDER SHIPMENTS, CATTLE

|                        |     |     |     |     |     |     |     |     |     |     |     |     |       |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 1925----               | 194 | 163 | 213 | 254 | 198 | 143 | 234 | 347 | 409 | 681 | 449 | 308 | 3,593 |
| 1926----               | 207 | 161 | 171 | 190 | 201 | 153 | 188 | 240 | 495 | 648 | 521 | 273 | 3,456 |
| 1927----               | 187 | 162 | 182 | 184 | 215 | 157 | 128 | 252 | 384 | 626 | 548 | 278 | 3,303 |
| 1928----               | 215 | 175 | 154 | 236 | 263 | 165 | 175 | 312 | 525 | 704 | 420 | 218 | 3,562 |
| 1929----               | 159 | 106 | 146 | 266 | 266 | 157 | 159 | 246 | 394 | 673 | 459 | 219 | 3,250 |
| 1930----               | 201 | 173 | 176 | 219 | 172 | 108 | 99  | 130 | 368 | 570 | 375 | 267 | 2,858 |
| 1931----               | 189 | 130 | 126 | 156 | 135 | 100 | 108 | 231 | 348 | 495 | 384 | 207 | 2,609 |
| 1932----               | 108 | 96  | 108 | 116 | 100 | 90  | 136 | 247 | 347 | 392 | 296 | 168 | 2,203 |
| 1933----               | 126 | 107 | 87  | 127 | 153 | 129 | 96  | 183 | 233 | 444 | 310 | 129 | 2,124 |
| 1934 <sup>1</sup> ---- | 129 | 100 | 119 | 124 | 136 | 124 | 439 | 731 | 483 | 396 | 259 | 136 | 3,176 |

## STOCKER AND FEEDER SHIPMENTS, CALVES

|                        |    |    |    |    |    |    |    |    |    |     |     |    |     |
|------------------------|----|----|----|----|----|----|----|----|----|-----|-----|----|-----|
| 1925----               | 12 | 13 | 17 | 17 | 18 | 11 | 9  | 13 | 18 | 37  | 40  | 25 | 230 |
| 1926----               | 18 | 13 | 13 | 13 | 17 | 11 | 11 | 12 | 26 | 45  | 49  | 23 | 256 |
| 1927----               | 18 | 13 | 18 | 19 | 20 | 12 | 10 | 19 | 22 | 49  | 67  | 41 | 306 |
| 1928----               | 18 | 19 | 19 | 18 | 21 | 19 | 21 | 24 | 37 | 94  | 76  | 35 | 403 |
| 1929----               | 19 | 12 | 10 | 26 | 28 | 19 | 14 | 20 | 29 | 85  | 97  | 37 | 401 |
| 1930----               | 32 | 28 | 30 | 30 | 28 | 21 | 10 | 20 | 75 | 121 | 103 | 64 | 568 |
| 1931----               | 33 | 18 | 20 | 19 | 18 | 12 | 16 | 30 | 42 | 86  | 103 | 38 | 435 |
| 1932----               | 22 | 14 | 18 | 22 | 18 | 15 | 21 | 33 | 43 | 86  | 81  | 42 | 416 |
| 1933----               | 27 | 22 | 15 | 25 | 40 | 20 | 15 | 30 | 29 | 83  | 71  | 46 | 423 |
| 1934 <sup>1</sup> ---- | 36 | 21 | 20 | 23 | 26 | 15 | 42 | 70 | 67 | 81  | 59  | 29 | 489 |

<sup>1</sup> Includes purchases for Federal Surplus Relief Corporation from June 6 to Dec. 31.

Bureau of Agricultural Economics. Compiled from data of the livestock and meat reporting service of the Bureau. Earlier data in 1930 Yearbook, table 353.

TABLE 323.—Feeder cattle, inspected: Shipments from public stockyards, 1925-34

| Origin and destination | Calendar year |       |       |       |       |       |       |       |       |       |
|------------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                        | 1925          | 1926  | 1927  | 1928  | 1929  | 1930  | 1931  | 1932  | 1933  | 1934  |
| Market origin:         | Thou-         | Thou- | Thou- | Thou- | Thou- | Thou- | Thou- | Thou- | Thou- | Thou- |
| sands                  | sands         | sands | sands | sands | sands | sands | sands | sands | sands | sands |
| Chicago, Ill.          | 230           | 245   | 167   | 171   | 157   | 132   | 173   | 141   | 128   | 145   |
| Denver, Colo.          | 281           | 288   | 328   | 403   | 334   | 327   | 228   | 165   | 169   | 167   |
| East St. Louis, Ill.   | 113           | 110   | 97    | 90    | 99    | 86    | 95    | 103   | 81    | 115   |
| Fort Worth, Tex.       | 196           | 233   | 273   | 285   | 237   | 190   | 153   | 116   | 80    | 138   |
| Indianapolis, Ind.     | 55            | 44    | 29    | 31    | 27    | 27    | 25    | 24    | 25    | 35    |
| Kansas City, Kans.     | 825           | 706   | 671   | 684   | 680   | 650   | 635   | 595   | 504   | 511   |
| Louisville, Ky.        | 27            | 19    | 34    | 24    | 17    | 10    | 7     | 28    | 25    | 38    |
| Oklahoma City, Okla.   | 78            | 69    | 89    | 80    | 85    | 70    | 64    | 70    | 74    | 90    |
| Omaha, Nebr.           | 390           | 379   | 329   | 355   | 398   | 405   | 385   | 330   | 332   | 284   |
| Sioux City, Iowa.      | 247           | 300   | 237   | 274   | 286   | 282   | 229   | 171   | 245   | 284   |
| South St. Joseph, Mo.  | 71            | 56    | 51    | 60    | 51    | 90    | 88    | 73    | 86    | 104   |
| South St. Paul, Minn.  | 208           | 201   | 203   | 198   | 209   | 153   | 133   | 95    | 102   | 244   |
| Wichita, Kans.         | 209           | 152   | 193   | 205   | 164   | 217   | 173   | 116   | 117   | 280   |
| All other inspected    | 177           | 195   | 268   | 344   | 326   | 312   | 301   | 290   | 289   | 434   |
| Total                  | 3,098         | 3,087 | 2,974 | 3,204 | 3,080 | 2,951 | 2,694 | 2,312 | 2,266 | 2,849 |
| State destination:     |               |       |       |       |       |       |       |       |       |       |
| Colorado               | 131           | 169   | 180   | 210   | 184   | 156   | 113   | 80    | 76    | 71    |
| Illinois               | 437           | 435   | 290   | 310   | 313   | 275   | 321   | 364   | 264   | 276   |
| Indiana                | 150           | 167   | 136   | 113   | 106   | 94    | 132   | 133   | 94    | 147   |
| Iowa                   | 487           | 577   | 431   | 499   | 538   | 506   | 483   | 434   | 525   | 492   |
| Kansas                 | 468           | 378   | 423   | 478   | 463   | 454   | 351   | 271   | 274   | 210   |
| Kentucky               | 41            | 43    | 86    | 59    | 46    | 24    | 27    | 34    | 36    | 113   |
| Michigan               | 49            | 41    | 36    | 41    | 34    | 21    | 24    | 26    | 24    | 27    |
| Minnesota              | 36            | 32    | 25    | 29    | 42    | 41    | 28    | 21    | 21    | 23    |
| Missouri               | 277           | 255   | 267   | 229   | 203   | 192   | 218   | 186   | 198   | 162   |
| Nebraska               | 427           | 374   | 386   | 474   | 447   | 561   | 419   | 264   | 310   | 210   |
| Ohio                   | 97            | 102   | 93    | 70    | 83    | 52    | 93    | 91    | 63    | 114   |
| Oklahoma               | 168           | 159   | 170   | 143   | 155   | 128   | 103   | 97    | 92    | 51    |
| Pennsylvania           | 31            | 30    | 31    | 70    | 44    | 37    | 39    | 57    | 62    | 115   |
| South Dakota           | 38            | 32    | 50    | 64    | 75    | 91    | 45    | 20    | 32    | 30    |
| Texas                  | 116           | 151   | 160   | 196   | 155   | 123   | 98    | 71    | 52    | 82    |
| Wisconsin              | 26            | 29    | 12    | 12    | 20    | 14    | 11    | 7     | 8     | 9     |
| All other              | 119           | 113   | 198   | 207   | 172   | 182   | 189   | 150   | 135   | 717   |
| Total                  | 3,098         | 3,087 | 2,974 | 3,204 | 3,080 | 2,951 | 2,694 | 2,312 | 2,266 | 2,849 |

Bureau of Agricultural Economics. Compiled from Bureau of Animal Industry inspection records.  
Data for earlier years in 1928 Yearbook, table 356.

TABLE 324.—Beef cattle and veal calves: Average price per 100 pounds received by producers, United States, 1925-34

## BEEF CATTLE

| Year | Jan.<br>15 | Feb.<br>15 | Mar.<br>15 | Apr.<br>15 | May<br>15 | June<br>15 | July<br>15 | Aug.<br>15 | Sept.<br>15 | Oct.<br>15 | Nov.<br>15 | Dec.<br>15 | Weighted<br>average |
|------|------------|------------|------------|------------|-----------|------------|------------|------------|-------------|------------|------------|------------|---------------------|
|      | Dol.       | Dol.       | Dol.       | Dol.       | Dol.      | Dol.       | Dol.       | Dol.       | Dol.        | Dol.       | Dol.       | Dol.       | Dol.                |
| 1925 | 5.61       | 5.06       | 6.15       | 6.50       | 6.44      | 6.43       | 6.54       | 6.55       | 6.25        | 6.26       | 6.11       | 6.17       | 6.23                |
| 1926 | 6.29       | 6.39       | 6.62       | 6.64       | 6.55      | 6.55       | 6.43       | 6.27       | 6.46        | 6.40       | 6.29       | 6.37       | 6.43                |
| 1927 | 6.42       | 6.57       | 6.79       | 7.12       | 7.15      | 7.06       | 7.11       | 7.18       | 7.39        | 7.52       | 7.96       | 8.29       | 7.23                |
| 1928 | 8.45       | 8.70       | 8.81       | 8.88       | 9.03      | 9.07       | 9.16       | 9.45       | 9.93        | 9.62       | 9.21       | 8.90       | 9.12                |
| 1929 | 8.91       | 8.83       | 9.09       | 9.45       | 9.64      | 9.67       | 9.75       | 9.55       | 9.16        | 8.85       | 8.57       | 8.43       | 9.15                |
| 1930 | 8.66       | 8.93       | 8.72       | 8.60       | 8.32      | 8.14       | 7.08       | 6.22       | 6.58        | 6.50       | 6.39       | 6.33       | 7.46                |
| 1931 | 6.38       | 5.98       | 5.98       | 5.95       | 5.61      | 5.21       | 5.11       | 5.05       | 4.96        | 4.72       | 4.76       | 4.32       | 5.31                |
| 1932 | 4.29       | 4.08       | 4.25       | 4.19       | 3.91      | 3.81       | 4.52       | 4.35       | 4.31        | 3.91       | 3.73       | 3.41       | 4.07                |
| 1933 | 3.28       | 3.31       | 3.42       | 3.54       | 3.95      | 4.04       | 3.97       | 3.79       | 3.61        | 3.50       | 3.32       | 3.12       | 3.63                |
| 1934 | 3.33       | 3.67       | 3.79       | 3.89       | 4.13      | 4.00       | 3.90       | 3.71       | 4.21        | 3.96       | 3.81       | 3.88       | 3.88                |

## VEAL CALVES

| Year | Jan.<br>15 | Feb.<br>15 | Mar.<br>15 | Apr.<br>15 | May<br>15 | June<br>15 | July<br>15 | Aug.<br>15 | Sept.<br>15 | Oct.<br>15 | Nov.<br>15 | Dec.<br>15 | Weighted<br>average |
|------|------------|------------|------------|------------|-----------|------------|------------|------------|-------------|------------|------------|------------|---------------------|
|      | Dol.       | Dol.       | Dol.       | Dol.       | Dol.      | Dol.       | Dol.       | Dol.       | Dol.        | Dol.       | Dol.       | Dol.       | Dol.                |
| 1925 | 8.49       | 8.85       | 9.21       | 8.80       | 8.35      | 8.18       | 8.65       | 8.81       | 9.07        | 9.52       | 9.16       | 9.17       | 8.85                |
| 1926 | 9.43       | 9.55       | 9.74       | 9.45       | 8.92      | 9.65       | 9.47       | 9.54       | 10.06       | 10.29      | 9.64       | 9.44       | 9.61                |
| 1927 | 9.75       | 10.10      | 10.10      | 9.90       | 9.37      | 9.40       | 9.82       | 10.37      | 10.78       | 11.04      | 10.67      | 10.71      | 10.15               |
| 1928 | 10.87      | 11.30      | 11.33      | 11.19      | 11.17     | 11.55      | 11.86      | 12.28      | 13.03       | 12.61      | 11.99      | 11.81      | 11.72               |
| 1929 | 12.20      | 12.17      | 12.51      | 12.09      | 12.10     | 12.05      | 12.40      | 12.38      | 12.51       | 12.15      | 11.79      | 11.68      | 12.17               |
| 1930 | 11.84      | 11.69      | 11.24      | 10.73      | 9.63      | 9.83       | 9.19       | 8.78       | 9.20        | 9.30       | 8.84       | 8.48       | 9.91                |
| 1931 | 8.61       | 8.20       | 7.66       | 7.38       | 7.15      | 6.81       | 6.66       | 6.75       | 6.95        | 6.58       | 6.02       | 5.59       | 7.04                |
| 1932 | 5.62       | 5.80       | 5.69       | 5.04       | 4.67      | 4.63       | 5.00       | 4.92       | 5.12        | 4.75       | 4.47       | 4.16       | 5.00                |
| 1933 | 4.12       | 4.75       | 4.57       | 4.36       | 4.50      | 4.51       | 4.62       | 4.75       | 4.96        | 4.84       | 4.66       | 4.20       | 4.61                |
| 1934 | 4.46       | 5.02       | 4.95       | 4.79       | 4.83      | 4.52       | 4.45       | 4.55       | 5.23        | 5.19       | 4.97       | 4.88       | 4.81                |

Bureau of Agricultural Economics. Based on reports of special price reporters. Monthly prices of beef cattle, by States, weighted by number of cattle Jan. 1 to obtain a price for the United States; monthly prices of veal calves, by States, weighted by number of milk cows Jan. 1 to obtain a price for the United States; yearly price obtained by weighting monthly prices by Federal inspected slaughter.

TABLE 325.—*Cattle and calves: Average price per 100 pounds at Chicago, by months, beef steers and veal calves, 1925-34*BEEF STEERS<sup>1</sup>

| Year      | Jan.        | Feb.        | Mar.        | Apr.        | May         | June        | July        | Aug.        | Sept.       | Oct.        | Nov.        | Dec.        | Average     |
|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|           | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> |
| 1925..... | 8.97        | 9.15        | 9.93        | 9.99        | 9.90        | 10.34       | 11.28       | 11.10       | 11.04       | 10.80       | 10.16       | 9.72        | 10.16       |
| 1926..... | 9.48        | 9.42        | 9.42        | 9.11        | 9.07        | 9.51        | 9.44        | 9.30        | 10.00       | 10.00       | 9.48        | 9.43        | 9.47        |
| 1927..... | 9.70        | 9.81        | 10.20       | 10.51       | 10.68       | 11.12       | 11.78       | 12.02       | 12.63       | 13.43       | 13.57       | 13.08       | 11.36       |
| 1928..... | 13.67       | 13.15       | 12.83       | 13.01       | 13.19       | 13.86       | 15.11       | 15.30       | 15.91       | 14.61       | 13.84       | 12.86       | 13.91       |
| 1929..... | 12.51       | 11.92       | 12.68       | 13.52       | 13.67       | 14.10       | 14.59       | 14.22       | 13.92       | 13.81       | 13.00       | 12.74       | 13.43       |
| 1930..... | 12.62       | 12.46       | 12.33       | 11.88       | 11.15       | 10.59       | 9.42        | 9.48        | 10.95       | 10.64       | 10.47       | 10.17       | 10.95       |
| 1931..... | 9.43        | 8.36        | 8.40        | 7.82        | 7.30        | 7.43        | 7.62        | 8.53        | 8.29        | 8.38        | 8.53        | 7.11        | 8.06        |
| 1932..... | 6.61        | 6.21        | 6.31        | 6.65        | 6.04        | 6.66        | 7.90        | 7.88        | 7.91        | 7.09        | 6.29        | 5.44        | 6.70        |
| 1933..... | 4.95        | 4.80        | 5.04        | 4.96        | 5.64        | 5.79        | 6.01        | 5.88        | 5.75        | 5.53        | 5.13        | 5.17        | 5.42        |
| 1934..... | 5.35        | 5.49        | 5.91        | 6.42        | 6.91        | 7.34        | 7.21        | 7.34        | 8.06        | 7.48        | 7.28        | 7.41        | 6.76        |

## VEAL CALVES

| Year      | Jan.        | Feb.        | Mar.        | Apr.        | May         | June        | July        | Aug.        | Sept.       | Oct.        | Nov.        | Dec.        | Average     |
|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|           | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> |
| 1925..... | 10.72       | 11.94       | 11.24       | 9.49        | 9.42        | 9.56        | 10.91       | 11.94       | 12.18       | 11.19       | 10.60       | 11.30       | 10.87       |
| 1926..... | 12.18       | 12.43       | 12.06       | 9.91        | 11.04       | 11.09       | 11.38       | 12.46       | 12.59       | 11.80       | 11.09       | 11.31       | 11.61       |
| 1927..... | 12.20       | 12.40       | 11.54       | 10.90       | 11.07       | 11.68       | 13.32       | 14.75       | 15.94       | 14.42       | 13.48       | 13.09       | 12.90       |
| 1928..... | 13.70       | 15.04       | 13.75       | 13.02       | 13.95       | 13.24       | 14.84       | 16.68       | 17.36       | 14.94       | 14.22       | 13.94       | 14.56       |
| 1929..... | 15.83       | 14.74       | 15.50       | 14.43       | 13.39       | 14.22       | 15.30       | 15.81       | 16.64       | 13.76       | 13.70       | 13.82       | 14.76       |
| 1930..... | 14.80       | 12.66       | 11.96       | 10.55       | 11.36       | 11.03       | 11.37       | 11.98       | 11.83       | 11.33       | 9.53        | 9.77        | 11.51       |
| 1931..... | 10.62       | 9.26        | 7.98        | 8.12        | 8.35        | 8.48        | 7.81        | 9.32        | 9.28        | 7.75        | 6.56        | 6.40        | 8.33        |
| 1932..... | 7.56        | 7.52        | 6.41        | 5.44        | 5.70        | 6.06        | 6.10        | 6.80        | 7.08        | 5.48        | 5.09        | 5.26        | 6.21        |
| 1933..... | 5.87        | 6.49        | 5.60        | 5.18        | 5.72        | 5.24        | 5.94        | 6.69        | 7.12        | 6.47        | 5.42        | 5.16        | 5.88        |
| 1934..... | 6.01        | 6.62        | 6.20        | 5.94        | 5.97        | 4.94        | 5.26        | 6.25        | 7.58        | 6.82        | 5.78        | 5.87        | 6.10        |

<sup>1</sup> Western steers not included.

Bureau of Agricultural Economics.

Beef-steer prices are the weighted average price of all grades of beef steers sold out of first hands at Chicago. Veal-calf prices from the livestock and meat reporting service of the Bureau on Medium to Choice grades prior to July 1, 1927, and subsequent prices on Good and Choice grades.

Earlier data in 1932 Yearbook, table 321.

TABLE 326.—*Cattle, choice steers for chilled beef: Average price per 100 pounds, by months, at Buenos Aires, 1925-35*

| Year      | Jan.        | Feb.        | Mar.        | Apr.        | May         | June        | July        | Aug.        | Sept.       | Oct.        | Nov.        | Dec.        | Average     |
|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|           | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> |
| 1925..... | 5.54        | 5.54        | 6.20        | 6.20        | 6.51        | 6.48        | 6.54        | 6.72        | 6.91        | 6.25        | 5.66        | 5.32        | 6.16        |
| 1926..... | 5.40        | 5.42        | 5.27        | 5.39        | 5.52        | 5.24        | 5.58        | 5.70        | 5.45        | 4.63        | 4.06        | 4.21        | 5.16        |
| 1927..... | 4.21        | 4.73        | 4.63        | 5.03        | 4.81        | 5.15        | 5.95        | 6.55        | 6.84        | 7.13        | 6.34        | 5.81        | 5.60        |
| 1928..... | 6.08        | 6.01        | 6.24        | 6.47        | 6.68        | 7.01        | 6.64        | 6.66        | 6.83        | 6.16        | 5.50        | 5.49        | 6.30        |
| 1929..... | 5.89        | 5.90        | 5.85        | 5.87        | 5.87        | 6.03        | 6.09        | 6.06        | 6.09        | 6.80        | 6.02        | 5.92        | 6.03        |
| 1930..... | 5.72        | 5.35        | 5.45        | 5.71        | 5.37        | 5.43        | 5.24        | 5.27        | 5.16        | 4.84        | 4.38        | 3.67        | 5.15        |
| 1931..... | 3.50        | 3.73        | 4.21        | 3.97        | 3.69        | 3.63        | 3.58        | 3.59        | 3.22        | 2.52        | 2.76        | 2.34        | 3.40        |
| 1932..... | 2.20        | 2.30        | 2.18        | 2.18        | 2.25        | 2.28        | 2.29        | 2.27        | 2.13        | 1.80        | 1.99        | 1.58        | 2.10        |
| 1933..... | 1.49        | 1.83        | 1.89        | 2.05        | 2.60        | 2.75        | 3.20        | 3.15        | 3.35        | 3.23        | 3.14        | 2.61        | 2.61        |
| 1934..... | 2.50        | 2.62        | 2.67        | 2.04        | 2.56        | 2.60        | 2.73        | 2.97        | 2.94        | 2.86        | 2.83        | 2.69        | 2.73        |
| 1935..... | 2.80        | 2.85        | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       | -----       |

Bureau of Agricultural Economics. Compiled from Review of the River Plate, as follows: 1925-27, average of Thursday quotations; 1928-34, average of high and low for weeks ended Saturday. Prices are quoted in live weight per pound. Converted at average monthly rates of exchange as given in Federal Reserve Bulletin. Data for earlier years in 1928 Yearbook, table 359.

TABLE 327.—Cattle and calves: Shipments, slaughter, value of production, and income by States, 1933

| State and division | Shipments and local slaughter |              |           |              | In shipments, stocker, feeding, and dairy |              |              |              | Farm slaughter |              |           |              | Value of amount consumed on farms | Receipts from sales | Gross income  | Value of production |
|--------------------|-------------------------------|--------------|-----------|--------------|---|--------------|--------------|--------------|----------------|--------------|-----------|--------------|-----------------------------------|---------------------|---------------|---------------------|
|                    | Cattle                        |              | Calves    |              | Total weight                              | Head         | Total weight | 1,000 pounds | Thousands      | Total weight | Head      | Total weight | 1,000 pounds                      | Thousands           | 1,000 dollars | 1,000 dollars       |
|                    | Head                          | Total weight | Head      | Total weight |   |              |              |              |                |              |           |              |                                   |                     |               |                     |
| North Atlantic     | Thousands                     | 1,000 pounds | Thousands | 1,000 pounds | Thousands                                 | 1,000 pounds | Thousands    | 1,000 pounds | Thousands      | 1,000 pounds | Thousands | 1,000 pounds | Thousands                         | 1,000 pounds        | Thousands     | 1,000 pounds        |
|                    | 270                           | 574,580      | 1,540     | 212,933      | 178                                       | 130,355      | 05           | 78,800       | 141            | 20,378       | 1,566     | 20,177       | 30,733                            | 31,424              | 30,733        | 31,424              |
|                    | Ohio.....                     | 230,450      | 420       | 68,640       | 60  | 38,610       | 26           | 22,100       | 25             | 4,000        | 664       | 12,384       | 13,038                            | 14,176              | 13,038        | 14,176              |
|                    | Indiana.....                  | 153          | 320,840   | 350          | 53,500                                    | 07           | 62,565       | 10           | 7,750          | 10           | 2,500     | 204          | 14,187                            | 14,451              | 14,187        | 14,451              |
|                    | Illinois.....                 | 886          | 828,285   | 465          | 65,760                                    | 423          | 283,985      | 20           | 16,500         | 30           | 6,000     | 582          | 26,260                            | 26,788              | 26,260        | 27,132              |
|                    | Michigan.....                 | 182          | 169,520   | 341          | 52,855                                    | 29           | 13,805       | 33           | 26,400         | 62           | 9,920     | 576          | 9,136                             | 9,712               | 10,603        | 11,682              |
|                    | Wisconsin.....                | 370          | 366,300   | 1,054        | 121,210                                   | 13           | 8,370        | 30           | 27,000         | 130          | 16,250    | 438          | 17,816                            | 18,254              | 17,816        | 18,682              |
|                    | East North Central            | 2,071        | 1,905,305 | 2,639        | 360,955                                   | 628          | 419,935      | 119          | 99,750         | 287          | 38,670    | 2,464        | 79,779                            | 82,243              | 82,243        | 84,512              |
|                    | Minnesota.....                | 779          | 648,345   | 732          | 102,122                                   | 152          | 95,000       | 65           | 54,600         | 35           | 7,700     | 1,551        | 24,762                            | 26,313              | 26,313        | 28,814              |
|                    | Iowa.....                     | 1,773        | 1,690,030 | 272          | 43,500                                    | 756          | 491,400      | 83           | 27,720         | 33           | 6,600     | 1,190        | 53,501                            | 54,001              | 54,001        | 61,217              |
| West North Central | Missouri.....                 | 1,000        | 900,500   | 514          | 102,800                                   | 493          | 288,265      | 18           | 13,770         | 10           | 3,000     | 354          | 20,151                            | 20,505              | 20,505        | 21,469              |
|                    | North Dakota.....             | 605          | 316,465   | 71           | 13,440                                    | 32           | 24,960       | 20           | 4,000          | 680          | 9,987     | 10,647       | 17,825                            | 18,267              | 17,825        | 18,267              |
|                    | South Dakota.....             | 605          | 484,000   | 66           | 14,200                                    | 32           | 20,480       | 14           | 11,200         | 14           | 3,500     | 468          | 17,825                            | 18,267              | 17,825        | 18,267              |
|                    | Nebraska.....                 | 1,350        | 1,254,950 | 130          | 27,500                                    | 669          | 441,530      | 25           | 21,000         | 30           | 7,000     | 1,080        | 36,524                            | 37,604              | 37,604        | 41,951              |
|                    | Kansas.....                   | 1,264        | 1,175,180 | 202          | 53,450                                    | 474          | 284,400      | 10           | 8,100          | 20           | 9,100     | 30           | 35,231                            | 35,675              | 35,675        | 39,627              |
|                    | West North Central            | 7,142        | 6,476,470 | 2,020        | 367,012                                   | 2,566        | 1,631,075    | 197          | 161,350        | 162          | 40,900    | 5,737        | 206,985                           | 212,722             | 212,722       | 233,844             |
|                    | North Central                 | 9,213        | 8,381,865 | 4,659        | 727,967                                   | 3,194        | 2,051,010    | 316          | 261,100        | 419          | 79,570    | 8,201        | 286,764                           | 294,065             | 294,065       | 318,356             |
| South Atlantic     | Delaware.....                 | 4            | 3,200     | 23           | 8,105                                     | 12           | 7,800        | 5            | 4,250          | 2            | 270       | 5            | 336                               | 341                 | 341           | 312                 |
|                    | Maryland.....                 | 81           | 26,360    | 104          | 14,040                                    | 10           | 8,500        | 5            | 7,600          | 6            | 1,485     | 83           | 1,788                             | 1,871               | 1,871         | 1,980               |
|                    | Virginia.....                 | 145          | 120,280   | 151          | 22,350                                    | 1            | 8,500        | 10           | 8,250          | 11           | 1,485     | 135          | 5,669                             | 5,704               | 5,704         | 5,885               |
|                    | West Virginia.....            | 87           | 75,300    | 52           | 9,100                                     | 1            | 888          | 10           | 8,250          | 15           | 2,625     | 163          | 8,617                             | 8,770               | 8,770         | 9,125               |

|                     |        |            |       |           |       |           |  |     |         |       |         |        |         |         |         |
|---------------------|--------|------------|-------|-----------|-------|-----------|--|-----|---------|-------|---------|--------|---------|---------|---------|
| North Carolina..... | 77     | 53,900     | 67    | 8,375     |       |           |  | 20  | 12,000  | 20    | 2,500   | 184    | 2,682   | 2,806   | 2,999   |
| South Carolina..... | 42     | 29,400     | 41    | 5,125     |       |           |  | 8   | 5,000   | 8     | 1,000   | 66     | 1,387   | 1,433   | 1,426   |
| Georgia.....        | 90     | 40,500     | 61    | 9,760     |       |           |  | 22  | 9,900   | 48    | 8,400   | 142    | 1,871   | 2,013   | 2,465   |
| Florida.....        | 52     | 24,700     | 31    | 3,565     | 3     | 1,260     |  | 10  | 4,760   | 8     | 920     | 38     | 1,064   | 1,102   | 1,318   |
| South Atlantic..... | 528    | 382,000    | 530   | 75,420    | 24    | 13,825    |  | 85  | 52,850  | 118   | 18,010  | 796    | 18,404  | 19,200  | 20,530  |
| Kentucky.....       | 184    | 155,710    | 200   | 30,490    | 48    | 31,200    |  | 12  | 9,000   | 8     | 1,760   | 161    | 6,017   | 6,173   | 7,222   |
| Tennessee.....      | 214    | 175,080    | 144   | 20,160    | 23    | 14,950    |  | 8   | 5,800   | 11    | 2,750   | 100    | 5,975   | 6,473   | 6,452   |
| Alabama.....        | 147    | 77,175     | 48    | 7,200     | 2     | 800       |  | 12  | 5,400   | 18    | 3,150   | 83     | 2,276   | 2,359   | 2,666   |
| Mississippi.....    | 191    | 114,000    | 68    | 10,200    | 8     | 3,760     |  | 12  | 6,480   | 15    | 2,400   | 68     | 2,871   | 2,939   | 3,368   |
| Arkansas.....       | 111    | 68,330     | 47    | 8,225     | 2     | 940       |  | 21  | 10,260  | 20    | 4,200   | 114    | 2,261   | 2,373   | 2,896   |
| Louisiana.....      | 113    | 67,800     | 34    | 4,760     | 12    | 4,200     |  | 15  | 7,050   | 15    | 2,700   | 147    | 2,287   | 2,454   | 3,365   |
| Oklahoma.....       | 593    | 453,645    | 135   | 33,750    | 130   | 78,000    |  | 26  | 18,200  | 35    | 8,750   | 435    | 12,836  | 13,271  | 15,228  |
| Texas.....          | 1,232  | 924,000    | 744   | 193,440   | 131   | 91,700    |  | 65  | 42,250  | 100   | 26,000  | 1,078  | 34,650  | 35,723  | 39,890  |
| South Central.....  | 2,785  | 2,036,340  | 1,420 | 308,225   | 356   | 225,550   |  | 171 | 104,470 | 222   | 51,710  | 2,186  | 69,173  | 71,359  | 81,087  |
| Montana.....        | 235    | 211,500    | 40    | 8,000     | 5     | 3,500     |  | 19  | 16,840  | 15    | 3,750   | 399    | 7,140   | 7,539   | 10,385  |
| Idaho.....          | 127    | 114,300    | 30    | 5,400     | 5     | 3,250     |  | 12  | 9,000   | 18    | 2,880   | 114    | 3,891   | 4,005   | 4,699   |
| Wyoming.....        | 185    | 150,895    | 30    | 9,590     | 12    | 7,200     |  | 12  | 8,200   | 3     | 3,980   | 278    | 5,261   | 5,539   | 7,353   |
| Colorado.....       | 425    | 336,350    | 55    | 15,125    | 98    | 76,460    |  | 11  | 6,075   | 12    | 3,600   | 242    | 10,996  | 11,233  | 13,744  |
| New Mexico.....     | 234    | 163,800    | 149   | 43,800    | 32    | 19,500    |  | 9   | 6,075   | 11    | 3,300   | 243    | 6,095   | 6,933   | 7,923   |
| Arizona.....        | 185    | 125,740    | 74    | 19,950    | 16    | 9,200     |  | 10  | 6,520   | 8     | 2,000   | 238    | 5,206   | 5,444   | 6,214   |
| Utah.....           | 87     | 81,550     | 28    | 5,600     | 6     | 4,400     |  | 10  | 8,500   | 5     | 1,000   | 162    | 2,998   | 3,160   | 3,120   |
| Nevada.....         | 49     | 45,500     | 6     | 1,320     | 2     | 1,400     |  | 5   | 3,750   | 43    | 7,920   | 103    | 1,670   | 1,773   | 2,029   |
| Washington.....     | 82     | 73,800     | 82    | 14,760    | 5     | 3,750     |  | 13  | 9,750   | 48    | 6,700   | 196    | 3,977   | 4,201   | 4,401   |
| Oregon.....         | 123    | 119,310    | 53    | 10,600    | 1     | 700       |  | 17  | 13,260  | 28    | 5,700   | 196    | 5,778   | 6,225   | 6,225   |
| California.....     | 509    | 477,460    | 352   | 83,450    | 233   | 188,400   |  | 15  | 13,200  | 30    | 6,300   | 471    | 16,632  | 17,103  | 18,961  |
| Western.....        | 2,241  | 1,923,205  | 896   | 217,545   | 415   | 314,200   |  | 133 | 104,545 | 190   | 37,880  | 2,670  | 70,244  | 72,914  | 82,034  |
| United States.....  | 15,440 | 13,298,590 | 9,045 | 1,542,090 | 4,167 | 2,744,000 |  | 800 | 601,265 | 1,090 | 207,548 | 15,409 | 473,762 | 489,171 | 533,431 |

Bureau of Agricultural Economics; preliminary estimates of Division of Crop and Livestock Estimates. The figures on income as shown in tables 461 and 462 are computed from the data shown in this table. The difference between gross income and value of production arises from the fact that in computing value of production allowance is made for changes in inventory numbers between the beginning and end of the year, while in computing income these changes are not used.

TABLE 328.—*Cattle and calves: Annual slaughter under Federal inspection, 1907-34, estimated equivalent of Federal inspection, 1900-1906, and estimated total slaughter (including farm) in United States, 1900-1934*<sup>1</sup>

| Year      | Cattle              |                    | Calves              |                    | Year      | Cattle              |                    | Calves              |                    |
|-----------|---------------------|--------------------|---------------------|--------------------|-----------|---------------------|--------------------|---------------------|--------------------|
|           | Federally inspected | Total <sup>2</sup> | Federally inspected | Total <sup>2</sup> |           | Federally inspected | Total <sup>2</sup> | Federally inspected | Total <sup>2</sup> |
|           | Thousands           | Thousands          | Thousands           | Thousands          |           | Thousands           | Thousands          | Thousands           | Thousands          |
| 1900..... | 5,801               | 10,242             |                     |                    | 1918..... | 11,829              | 15,750             | 3,456               | 7,514              |
| 1901..... | 6,312               | 11,038             |                     |                    | 1919..... | 10,091              | 14,838             | 3,969               | 8,445              |
| 1902..... | 6,465               | 11,697             |                     |                    | 1920..... | 8,609               | 13,885             | 4,053               | 8,455              |
| 1903..... | 6,755               | 12,463             |                     |                    | 1921..... | 7,608               | 12,271             | 3,808               | 7,771              |
| 1904..... | 6,702               | 12,099             |                     |                    | 1922..... | 8,678               | 13,148             | 4,182               | 8,363              |
| 1905..... | 7,259               | 12,649             |                     |                    | 1923..... | 9,163               | 13,883             | 4,500               | 8,824              |
| 1906..... | 7,541               | 12,944             |                     |                    | 1924..... | 9,593               | 14,400             | 4,935               | 9,466              |
| 1907..... | 7,633               | 13,287             | 2,024               | 6,211              | 1925..... | 9,853               | 14,706             | 5,353               | 10,099             |
| 1908..... | 7,279               | 12,852             | 1,958               | 6,048              | 1926..... | 10,180              | 14,971             | 5,153               | 9,542              |
| 1909..... | 7,714               | 13,611             | 2,189               | 6,516              | 1927..... | 9,520               | 14,000             | 4,876               | 9,030              |
| 1910..... | 7,805               | 13,541             | 2,238               | 6,553              | 1928..... | 8,467               | 12,452             | 4,680               | 8,667              |
| 1911..... | 7,619               | 12,958             | 2,184               | 6,264              | 1929..... | 8,324               | 12,241             | 4,489               | 8,313              |
| 1912..... | 7,253               | 11,979             | 2,278               | 6,348              | 1930..... | 8,170               | 12,168             | 4,595               | 8,532              |
| 1913..... | 6,978               | 11,478             | 1,902               | 5,285              | 1931..... | 8,108               | 12,156             | 4,717               | 8,792              |
| 1914..... | 6,757               | 11,004             | 1,997               | 4,661              | 1932..... | 7,625               | 11,895             | 4,494               | 8,650              |
| 1915..... | 7,153               | 10,822             | 1,819               | 4,640              | 1933..... | 8,665               |                    | 4,907               |                    |
| 1916..... | 8,310               | 12,027             | 2,367               | 5,774              | 1934..... | 13,319              |                    | 7,454               |                    |
| 1917..... | 10,350              | 13,724             | 3,143               | 7,031              |           |                     |                    |                     |                    |

<sup>1</sup> Federal Meat Inspection Act effective Oct. 1, 1906.<sup>2</sup> Subject to revision.Bureau of Animal Industry and Bureau of Agricultural Economics.  
Data for years 1880-99 last printed in 1933 Yearbook, table 316.TABLE 329.—*Cattle and calves: Slaughter in specified countries, 1925-34*

| Year                    | United States<br>Federally<br>inspected | Canada<br>total | Argentina,<br>including<br>chilling, freez-<br>ing, salting,<br>and canned<br>meat works <sup>1</sup> | Uruguay,<br>excluding<br>farm <sup>2</sup> | Australia<br>total | New<br>Zealand<br>total <sup>3</sup> |
|-------------------------|---|-----------------|---|--|--------------------|--------------------------------------|
|                         | Thousands                               | Thousands       | Thousands   | Thousands                                  | Thousands          | Thousands                            |
| 1925.....               | 15,206                                  | 1,921           | 3,871   | 1,233                                      | 2,434              | 550                                  |
| 1926.....               | 15,333                                  | 1,902           | 3,510   | 1,293                                      | 2,160              | 519                                  |
| 1927.....               | 14,396                                  | 1,993           | 3,718   | 1,230                                      | 2,189              | 636                                  |
| 1928.....               | 13,147                                  | 1,949           | 3,258   | 1,271                                      | 2,200              | 806                                  |
| 1929.....               | 12,813                                  | 1,953           | 3,024   | 1,375                                      | 1,947              | 811                                  |
| 1930.....               | 12,765                                  | 1,904           | 2,987   | 1,285                                      | 1,787              | 894                                  |
| 1931.....               | 12,825                                  | 1,702           | 2,507   | 1,103                                      | 1,751              | 938                                  |
| 1932.....               | 12,117                                  | 1,669           | 2,381   | 916  | (4)                | 1,019                                |
| 1933.....               | 13,562                                  | 1,715           | 2,527   | 1,006                                      | (4)                |                                      |
| 1934 <sup>4</sup> ..... | 20,651                                  | (5)             |   |  | (4)                |                                      |

<sup>1</sup> Including municipal and private slaughterhouses, the figures were as follows, in thousands: 1930, 5,966; 1931, 5,383; 1932, 5,344. The numbers killed in freezing and chilling plants alone were as follows, in thousands: 1930, 2,679; 1931, 2,296; 1932, 2,221; 1933, 2,342; 1934, 2,606.<sup>2</sup> Slaughtering in freezing and chilling plants alone was as follows, in thousands: 1930, 786; 1931, 617; 1932, 497; 1933, 532; 1934, 569.<sup>3</sup> For years beginning Apr. 1.<sup>4</sup> Slaughter for export only was as follows, in thousands: 1930, 429; 1931, 425; 1932, 397; 1933, 527; 1934, 653.<sup>5</sup> Preliminary estimates.<sup>6</sup> Inspected slaughter, only, was as follows, in thousands: 1930, 978; 1931, 963; 1932, 937; 1933, 1,092; 1934, 1,347.

Bureau of Agricultural Economics; compiled from official sources and cabled reports from agricultural representatives abroad. Data for earlier years in 1928 Yearbook, table 364.

TABLE 330.—*Beef and beef products: International trade, average 1925-29, annual 1931-33*

| Country                          | Calendar year   |              |              |              |                   |                    |                   |              |
|----------------------------------|-----------------|--------------|--------------|--------------|-------------------|--------------------|-------------------|--------------|
|                                  | Average 1925-29 |              | 1931         |              | 1932              |                    | 1933 <sup>1</sup> |              |
|                                  | Exports         | Imports      | Exports      | Imports      | Exports           | Imports            | Exports           | Imports      |
| PRINCIPAL EXPORTING COUNTRIES    | 1,000 pounds    | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 pounds      | 1,000 pounds       | 1,000 pounds      | 1,000 pounds |
| Argentina.....                   | 1,552,601       | 93           | 1,115,653    | 112          | 1,054,298         | 30                 | 1,020,678         | 35           |
| Uruguay.....                     | 287,281         | 0            | 195,823      | 0            | 204,101           | 0                  |                   |              |
| Australia <sup>2</sup> .....     | 284,476         | 1,711        | 214,821      | 4,765        | 252,998           | 498                | 238,255           | 273          |
| Netherlands.....                 | 237,540         | 159,721      | 148,082      | 130,890      | 55,047            | 72,345             | 38,051            | 58,530       |
| United States <sup>3</sup> ..... | 144,303         | 84,233       | 100,891      | 29,433       | 89,748            | 30,373             | 95,020            | 49,736       |
| New Zealand.....                 | 115,286         | 626          | 105,358      | 454          | 117,398           | 437                | 167,436           | 399          |
| Brazil.....                      | 109,765         | 7,221        | 150,182      | 2,289        | 89,114            | 183                | 84,022            | 464          |
| Canada.....                      | 42,616          | 1,867        | 7,809        | 502          | 6,942             | 559                | 10,992            | 342          |
| Denmark.....                     | 27,793          | 12,359       | 77,568       | 10,583       | 35,301            | 9,078              | 33,206            | 7,015        |
| Union of South Africa            | 23,193          | 8,397        | 22,240       | 13,317       | 16,292            | 3,338              | 23,478            | 6,591        |
| Poland.....                      | 17,646          | 2,032        | 21,520       | 1,049        | 4,433             | 994                | 2,852             | 738          |
| Rumania.....                     | 8,324           | 4,471        | 8,659        | 274          | 2,674             | 357                |                   |              |
| Irish Free State.....            | 8,992           | 8,581        | 3,928        | 5,010        | 5,224             | 5,224              | 5,125             | 401          |
| Austria.....                     | 5,337           | 5,149        | 5,237        | 13,309       | 2,956             | 14,003             | 2,938             | 9,531        |
| China.....                       | 5,071           | 1,619        | 585          | 1,475        | <sup>4</sup> 1,68 | <sup>5</sup> 1,512 | 73                | 1,696        |
| Hungary.....                     | 4,834           | 207          | 4,408        | 31           | 3,123             | 17                 | 1,774             | 9            |
| Total.....                       | 2,874,958       | 294,287      | 2,182,744    | 213,473      | 1,937,285         | 138,998            | 1,723,900         | 135,760      |
| PRINCIPAL IMPORTING COUNTRIES    |                 |              |              |              |                   |                    |                   |              |
| United Kingdom.....              | 34,345          | 1,795,364    | 40,863       | 1,667,824    | 25,224            | 1,499,335          | 3,891             | 1,490,221    |
| Germany.....                     | 4,267           | 386,911      | 9,948        | 74,976       | 3,334             | 79,684             | 1,329             | 82,629       |
| France.....                      | 35,552          | 147,055      | 33,712       | 138,494      | 30,224            | 80,275             | 21,858            | 68,739       |
| Belgium.....                     | 37,950          | 122,165      | 14,909       | 103,985      | 6,085             | 52,233             | 4,480             | 50,604       |
| Japan.....                       | 0               | 68,201       | 0            | 74,426       | 0                 | 47,904             | 0                 | 29,666       |
| Cuba.....                        | 267             | 44,490       | 0            | 23,984       | 40                | 19,416             |                   |              |
| Italy <sup>6</sup> .....         | 335             | 23,611       | 1,136        | 17,431       | 258               | 16,963             | 304               | 17,416       |
| Sweden.....                      | 8,759           | 19,604       | 6,190        | 16,981       | 5,177             | 14,237             | 5,011             | 17,203       |
| Spain.....                       | 55              | 16,785       | 25           | 19,422       | 28                | 24,683             | 33                | 31,509       |
| Norway.....                      | 1,880           | 14,365       | 1,574        | 10,904       | 4,537             | 4,168              | 2,862             | 3,364        |
| British India.....               | 1,254           | 11,346       | 775          | 13,723       | 685               | 15,559             | 716               | 13,534       |
| Philippine Islands.....          | 0               | 11,013       | 0            | 7,202        | 0                 | 4,776              |                   |              |
| Czechoslovakia.....              | 464             | 8,165        | 37           | 7,845        | 10                | 936                | 7                 | 240          |
| British Malaya.....              | 682             | 6,958        | 590          | 6,173        | 460               | 4,953              | 411               | 4,286        |
| Switzerland.....                 | 799             | 6,373        | 559          | 6,907        | 131               | 7,844              | 125               | 8,439        |
| Finland.....                     | 89              | 5,235        | 474          | 2,580        | 33                | 2,933              | 0                 | 2,118        |
| Egypt.....                       | 11              | 4,767        | 7            | 2,277        | 19                | 1,851              |                   | 2,077        |
| Chile.....                       | 125             | 3,645        | 109          | 2,471        | 133               | 199                | 103               |              |
| Total.....                       | 126,843         | 2,696,113    | 110,878      | 2,197,605    | 76,978            | 1,877,949          | 41,190            | 1,810,045    |

<sup>1</sup> Preliminary.<sup>2</sup> Year ended June 30.<sup>3</sup> The import figures include "canned beef and veal" as taken from reports of the Bureau of Animal Industry.<sup>4</sup> 4-year average.<sup>5</sup> Does not include Manchuria after June 30, 1932.<sup>6</sup> Includes only oleomargarine, tallow, and artificial butter. Meat imports into Italy are not separated as to kinds, although a large quantity of unclassified fresh and frozen meat is undoubtedly beef.

Bureau of Agricultural Economics, official sources.

This table includes fresh, pickled or salted, and canned beef, tallow, oleo oil, oleo stock, oleo stearin, and oleomargarine.



TABLE 331.—*Beef: Stocks in cold storage warehouses and meat-packing establishments, United States, 1925-34*

| Kind and year                             | Jan. 1       | Feb. 1       | Mar. 1       | Apr. 1       | May 1        | June 1       | July 1       | Aug. 1       | Sept. 1      | Oct. 1       | Nov. 1       | Dec. 1       |
|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|   | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. |
| Beef, frozen:                             |              |              |              |              |              |              |              |              |              |              |              |              |
| 1925.....                                 | 114, 034     | 111, 947     | 101, 599     | 87, 684      | 67, 271      | 46, 887      | 36, 452      | 26, 970      | 22, 879      | 19, 755      | 27, 008      | 50, 436      |
| 1926.....                                 | 59, 850      | 55, 705      | 51, 498      | 43, 528      | 32, 372      | 26, 649      | 23, 997      | 23, 509      | 21, 311      | 25, 267      | 38, 079      | 59, 603      |
| 1927.....                                 | 72, 352      | 67, 431      | 60, 659      | 50, 945      | 39, 712      | 28, 719      | 23, 261      | 18, 552      | 17, 241      | 19, 456      | 26, 696      | 45, 567      |
| 1928.....                                 | 54, 968      | 50, 673      | 44, 017      | 37, 625      | 28, 253      | 20, 654      | 17, 256      | 18, 896      | 17, 603      | 22, 463      | 41, 635      | 60, 189      |
| 1929.....                                 | 77, 051      | 72, 117      | 67, 486      | 60, 664      | 51, 442      | 39, 878      | 35, 759      | 31, 085      | 32, 122      | 38, 996      | 51, 902      | 70, 390      |
| 1930.....                                 | 77, 230      | 72, 602      | 69, 800      | 64, 146      | 57, 273      | 49, 913      | 46, 819      | 45, 830      | 43, 433      | 43, 515      | 47, 221      | 54, 894      |
| 1931.....                                 | 55, 649      | 52, 130      | 47, 334      | 41, 509      | 34, 082      | 31, 195      | 28, 842      | 25, 211      | 24, 061      | 20, 861      | 20, 871      | 25, 364      |
| 1932.....                                 | 37, 812      | 36, 147      | 35, 063      | 31, 377      | 26, 837      | 22, 429      | 17, 856      | 14, 975      | 12, 943      | 14, 139      | 23, 324      | 27, 843      |
| 1933.....                                 | 29, 279      | 26, 521      | 23, 475      | 21, 541      | 19, 606      | 18, 954      | 23, 164      | 27, 972      | 33, 180      | 35, 261      | 41, 816      | 50, 706      |
| 1934 <sup>1</sup> .....                   | 58, 377      | 51, 960      | 44, 481      | 36, 259      | 27, 866      | 24, 256      | 26, 988      | 40, 363      | 62, 798      | 75, 580      | 89, 387      | 105, 092     |
| Beef, cured and<br>in process of<br>cure: |              |              |              |              |              |              |              |              |              |              |              |              |
| 1925.....                                 | 28, 930      | 28, 758      | 29, 210      | 28, 634      | 23, 952      | 27, 731      | 25, 102      | 22, 704      | 22, 335      | 20, 964      | 20, 473      | 23, 128      |
| 1926.....                                 | 25, 140      | 24, 833      | 26, 192      | 27, 253      | 27, 606      | 25, 930      | 24, 691      | 22, 539      | 20, 386      | 20, 983      | 23, 119      | 26, 374      |
| 1927.....                                 | 28, 521      | 27, 823      | 27, 361      | 26, 214      | 23, 216      | 21, 694      | 20, 485      | 17, 170      | 16, 205      | 16, 422      | 17, 220      | 19, 778      |
| 1928.....                                 | 21, 979      | 20, 978      | 19, 732      | 19, 631      | 17, 941      | 16, 558      | 14, 982      | 13, 546      | 13, 462      | 14, 760      | 16, 401      | 19, 444      |
| 1929.....                                 | 21, 862      | 21, 873      | 21, 285      | 20, 943      | 19, 272      | 17, 437      | 16, 296      | 14, 845      | 15, 892      | 17, 438      | 20, 157      | 23, 054      |
| 1930.....                                 | 26, 653      | 26, 328      | 25, 798      | 24, 597      | 23, 347      | 21, 643      | 20, 072      | 18, 761      | 17, 322      | 16, 508      | 16, 641      | 18, 498      |
| 1931.....                                 | 19, 636      | 20, 268      | 20, 288      | 19, 602      | 19, 068      | 18, 253      | 16, 706      | 15, 844      | 14, 989      | 14, 310      | 13, 536      | 13, 794      |
| 1932.....                                 | 15, 387      | 15, 138      | 15, 444      | 14, 969      | 14, 389      | 13, 226      | 12, 053      | 11, 744      | 11, 433      | 11, 770      | 12, 712      | 13, 186      |
| 1933.....                                 | 13, 591      | 13, 029      | 12, 540      | 12, 240      | 11, 052      | 11, 584      | 11, 972      | 13, 851      | 15, 286      | 15, 937      | 17, 417      | 19, 304      |
| 1934 <sup>1</sup> .....                   | 20, 855      | 20, 988      | 20, 264      | 19, 589      | 18, 724      | 18, 290      | 18, 483      | 21, 182      | 17, 277      | 16, 995      | 19, 012      | 22, 861      |

<sup>1</sup> Stocks of meat from "drought-stricken livestock" purchased by Federal Surplus Relief Corporation are not included in these figures for year 1934.

Bureau of Agricultural Economics; compiled from reports made by cold-storage establishments. Data for earlier years in 1928 Yearbook, table 365.

TABLE 332.—*Cattle-tick eradication: Progress and status of the work Dec. 1, 1934*

| State               | Quarantined<br>counties on— |                 | Released counties to Dec. 1,<br>1934 |  |                               | Released counties tick free on<br>Nov. 1— |      |      |      |      |
|---------------------|-----------------------------|-----------------|--------------------------------------|--|-------------------------------|---|------|------|------|------|
|                     | July 1,<br>1906             | Dec. 1,<br>1934 | Tick<br>free                         | With 1<br>or more<br>infested<br>herds | Total<br>counties<br>released | 1930                                      | 1931 | 1932 | 1933 | 1934 |
| Alabama.....        | 67                          | 0               | 67                                   | 0                                      | 67                            | 64  | 67   | 67   | 66   | 67   |
| Arkansas.....       | 75                          | 0               | 63                                   | 12                                     | 75                            | 53  | 55   | 60   | 64   | 63   |
| California.....     | 15                          | 0               | 15                                   | 0                                      | 15                            | 15  | 15   | 15   | 15   | 15   |
| Florida.....        | 67                          | 11              | 43                                   | 8                                      | 56                            | 33  | 41   | 46   | 44   | 48   |
| Georgia.....        | 158                         | 0               | 158                                  | 0                                      | 158                           | 158                                       | 158  | 157  | 158  | 158  |
| Kentucky.....       | 2                           | 0               | 2                                    | 0                                      | 2                             | 2   | 2    | 2    | 2    | 2    |
| Louisiana.....      | 64                          | 24              | 16                                   | 24                                     | 40                            | 10  | 17   | 10   | 14   | 16   |
| Mississippi.....    | 82                          | 0               | 74                                   | 8                                      | 82                            | 78  | 77   | 77   | 79   | 74   |
| Missouri.....       | 4                           | 0               | 4                                    | 0                                      | 4                             | 4   | 4    | 4    | 4    | 4    |
| North Carolina..... | 73                          | 0               | 73                                   | 0                                      | 73                            | 70  | 73   | 73   | 73   | 73   |
| Oklahoma.....       | 61                          | 0               | 61                                   | 0                                      | 61                            | 61  | 61   | 61   | 60   | 61   |
| South Carolina..... | 46                          | 0               | 46                                   | 0                                      | 46                            | 46  | 46   | 46   | 46   | 46   |
| Tennessee.....      | 42                          | 0               | 42                                   | 0                                      | 42                            | 42  | 42   | 42   | 42   | 42   |
| Texas.....          | 198                         | 36              | 130                                  | 32                                     | 162                           | 116                                       | 113  | 126  | 135  | 130  |
| Virginia.....       | 31                          | 0               | 31                                   | 0                                      | 31                            | 31  | 30   | 31   | 31   | 31   |
| Total.....          | 985                         | 71              | 830                                  | 84                                     | 914                           | 783                                       | 801  | 817  | 833  | 830  |

TABLE 333.—*Hogs, including pigs: Number on farms and farm value per head, by States, Jan. 1, 1932-35*

| State and division      | Number    |           |           |                   | Farm value per head <sup>1</sup> |         |         |         |
|-------------------------|-----------|-----------|-----------|-------------------|----------------------------------|---------|---------|---------|
|                         | 1932      | 1933      | 1934      | 1935 <sup>2</sup> | 1932                             | 1933    | 1934    | 1935    |
|                         | Thousands | Thousands | Thousands | Thousands         | Dollars                          | Dollars | Dollars | Dollars |
| Maine.....              | 53        | 55        | 53        | 48                | 9.30                             | 7.00    | 6.40    | 8.60    |
| New Hampshire.....      | 15        | 16        | 14        | 13                | 9.90                             | 7.60    | 7.10    | 9.00    |
| Vermont.....            | 32        | 34        | 29        | 26                | 7.70                             | 5.80    | 6.00    | 8.20    |
| Massachusetts.....      | 99        | 84        | 86        | 80                | 8.90                             | 6.30    | 6.30    | 8.60    |
| Rhode Island.....       | 5         | 5         | 5         | 4                 | 8.00                             | 6.30    | 7.40    | 9.80    |
| Connecticut.....        | 25        | 25        | 22        | 21                | 8.20                             | 6.60    | 6.80    | 9.80    |
| New York.....           | 205       | 213       | 204       | 173               | 8.70                             | 6.40    | 6.60    | 8.40    |
| New Jersey.....         | 78        | 76        | 66        | 63                | 10.70                            | 6.70    | 7.30    | 10.10   |
| Pennsylvania.....       | 655       | 707       | 665       | 565               | 8.70                             | 6.00    | 6.10    | 8.00    |
| North Atlantic.....     | 1, 167    | 1, 214    | 1, 144    | 993               | 8.85                             | 6.20    | 6.33    | 8.35    |
| Ohio.....               | 2, 072    | 2, 601    | 2, 393    | 1, 651            | 6.60                             | 4.40    | 4.00    | 6.50    |
| Indiana.....            | 2, 953    | 3, 691    | 3, 802    | 2, 357            | 6.80                             | 4.50    | 3.60    | 6.00    |
| Illinois.....           | 4, 900    | 5, 537    | 5, 260    | 3, 209            | 6.80                             | 4.60    | 4.30    | 8.00    |
| Michigan.....           | 661       | 793       | 730       | 518               | 6.90                             | 4.70    | 4.10    | 6.40    |
| Wisconsin.....          | 1, 658    | 1, 611    | 1, 514    | 1, 151            | 5.80                             | 4.20    | 4.40    | 7.60    |
| East North Central..... | 12, 244   | 14, 233   | 13, 699   | 8, 886            | 6.63                             | 4.52    | 4.05    | 7.02    |
| Minnesota.....          | 3, 884    | 3, 496    | 3, 321    | 2, 026            | 6.40                             | 4.50    | 4.40    | 7.50    |
| Iowa.....               | 11, 140   | 10, 813   | 10, 813   | 6, 272            | 6.40                             | 4.50    | 4.70    | 8.00    |
| Missouri.....           | 4, 100    | 4, 674    | 4, 113    | 2, 303            | 5.60                             | 3.80    | 3.50    | 4.60    |
| North Dakota.....       | 751       | 638       | 434       | 269               | 5.50                             | 3.60    | 2.60    | 5.40    |
| South Dakota.....       | 1, 950    | 2, 048    | 1, 229    | 678               | 5.50                             | 4.00    | 4.10    | 5.50    |
| Nebraska.....           | 5, 334    | 4, 534    | 4, 715    | 2, 169            | 6.00                             | 4.30    | 4.40    | 6.20    |
| Kansas.....             | 3, 109    | 3, 264    | 2, 611    | 1, 410            | 5.40                             | 3.80    | 3.60    | 5.50    |
| West North Central..... | 30, 268   | 29, 467   | 27, 236   | 15, 125           | 6.04                             | 4.21    | 4.30    | 6.75    |
| North Central.....      | 42, 512   | 43, 700   | 40, 935   | 24, 011           | 6.21                             | 4.31    | 4.22    | 6.85    |
| Delaware.....           | 22        | 22        | 23        | 22                | 8.50                             | 5.10    | 5.00    | 7.00    |
| Maryland.....           | 160       | 176       | 181       | 147               | 7.50                             | 4.90    | 4.70    | 6.40    |
| Virginia.....           | 551       | 579       | 562       | 506               | 6.10                             | 4.50    | 4.40    | 6.10    |
| West Virginia.....      | 176       | 211       | 207       | 207               | 7.50                             | 5.20    | 4.70    | 5.80    |
| North Carolina.....     | 905       | 996       | 936       | 842               | 7.70                             | 5.10    | 5.50    | 7.40    |
| South Carolina.....     | 540       | 562       | 478       | 449               | 5.70                             | 4.70    | 5.00    | 5.70    |
| Georgia.....            | 1, 390    | 1, 376    | 1, 362    | 1, 158            | 5.00                             | 3.40    | 3.60    | 4.80    |
| Florida.....            | 508       | 513       | 477       | 405               | 3.60                             | 2.70    | 3.20    | 3.50    |
| South Atlantic.....     | 4, 262    | 4, 435    | 4, 226    | 3, 736            | 5.84                             | 4.14    | 4.35    | 5.67    |
| Kentucky.....           | 923       | 1, 101    | 1, 079    | 831               | 5.90                             | 4.00    | 3.50    | 5.70    |
| Tennessee.....          | 1, 075    | 1, 236    | 1, 137    | 966               | 6.30                             | 4.00    | 3.70    | 5.60    |
| Alabama.....            | 957       | 1, 053    | 943       | 844               | 5.40                             | 4.20    | 4.10    | 5.70    |
| Mississippi.....        | 878       | 1, 010    | 990       | 831               | 5.30                             | 3.50    | 3.50    | 4.90    |
| Arkansas.....           | 909       | 1, 100    | 990       | 742               | 5.20                             | 3.50    | 3.20    | 3.90    |
| Louisiana.....          | 679       | 672       | 632       | 569               | 6.50                             | 4.10    | 3.90    | 4.90    |
| Oklahoma.....           | 1, 205    | 1, 506    | 1, 024    | 645               | 5.00                             | 3.00    | 2.60    | 3.80    |
| Texas.....              | 1, 767    | 2, 033    | 1, 830    | 1, 226            | 5.40                             | 3.40    | 3.40    | 5.00    |
| South Central.....      | 8, 393    | 9, 711    | 8, 630    | 6, 704            | 5.58                             | 3.66    | 3.47    | 5.00    |
| Montana.....            | 252       | 227       | 227       | 145               | 5.10                             | 4.50    | 4.20    | 6.20    |
| Idaho.....              | 324       | 333       | 300       | 210               | 5.00                             | 3.40    | 3.20    | 5.80    |
| Wyoming.....            | 123       | 98        | 87        | 57                | 5.40                             | 3.40    | 3.40    | 4.60    |
| Colorado.....           | 624       | 536       | 440       | 273               | 5.30                             | 3.10    | 3.40    | 5.20    |
| New Mexico.....         | 74        | 73        | 58        | 34                | 5.70                             | 3.90    | 3.60    | 4.80    |
| Arizona.....            | 23        | 24        | 18        | 12                | 5.90                             | 4.10    | 4.70    | 6.20    |
| Utah.....               | 85        | 76        | 68        | 51                | 5.10                             | 3.90    | 4.10    | 5.40    |
| Nevada.....             | 21        | 19        | 17        | 13                | 6.70                             | 4.60    | 4.60    | 6.20    |
| Washington.....         | 220       | 220       | 202       | 152               | 6.80                             | 4.50    | 4.20    | 7.60    |
| Oregon.....             | 246       | 221       | 190       | 152               | 6.50                             | 4.30    | 4.30    | 6.80    |
| California.....         | 672       | 706       | 635       | 494               | 6.50                             | 4.30    | 4.30    | 6.90    |
| Western.....            | 2, 604    | 2, 538    | 2, 242    | 1, 563            | 5.80                             | 3.88    | 3.90    | 6.25    |
| United States.....      | 58, 988   | 61, 598   | 57, 177   | 37, 007           | 6.13                             | 4.22    | 4.14    | 6.41    |

<sup>1</sup> Sum of total value of subgroups (classified by age and sex), divided by total number and rounded to nearest dime for States. Division and United States averages not rounded. State figures are new weighted value series, not comparable to State figures previously published for the years prior to 1925.

<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 334.—Hogs: Number on farms and farm value per head in the United States Jan. 1, 1900–1935

| Year                    | Number <sup>1</sup> | Farm value per head Jan. 1 <sup>2</sup> | Year                    | Number <sup>1</sup> | Farm value per head Jan. 1 <sup>2</sup> | Year                    | Number <sup>1</sup> | Farm value per head Jan. 1 <sup>2</sup> |
|-------------------------|---------------------|---|-------------------------|---------------------|---|-------------------------|---------------------|---|
|                         | Thousands           | Dollars                                 |                         | Thousands           | Dollars                                 |                         | Thousands           | Dollars                                 |
| 1900 <sup>3</sup> ..... | 62,868              | -----                                   | 1912.....               | 55,700              | 8.46                                    | 1925 <sup>3</sup> ..... | 50,854              | -----                                   |
| 1900.....               | 52,600              | 5.28                                    | 1913.....               | 54,000              | 10.42                                   | 1925.....               | 55,770              | 13.15                                   |
| 1901.....               | 53,200              | 6.53                                    | 1914.....               | 51,800              | 10.99                                   | 1926.....               | 52,085              | 15.66                                   |
| 1902.....               | 46,800              | 7.43                                    | 1915.....               | 57,000              | 10.43                                   | 1927.....               | 55,468              | 17.19                                   |
| 1903.....               | 47,200              | 8.22                                    | 1916.....               | 59,700              | 8.88                                    | 1928.....               | 61,772              | 13.17                                   |
| 1904.....               | 49,500              | 6.50                                    | 1917.....               | 56,700              | 12.42                                   | 1929.....               | 58,789              | 12.94                                   |
| 1905.....               | 52,000              | 6.33                                    | 1918.....               | 61,200              | 20.65                                   | 1930 <sup>3</sup> ..... | 56,288              | -----                                   |
| 1906.....               | 54,600              | 6.53                                    | 1919.....               | 63,800              | 23.28                                   | 1930.....               | 55,301              | 13.46                                   |
| 1907.....               | 57,300              | 8.05                                    | 1920 <sup>3</sup> ..... | 59,348              | -----                                   | 1931.....               | 54,399              | 11.36                                   |
| 1908.....               | 61,300              | 6.39                                    | 1920.....               | 60,159              | 20.00                                   | 1932.....               | 58,988              | 6.13                                    |
| 1909.....               | 57,000              | 6.92                                    | 1921.....               | 58,942              | 13.63                                   | 1933.....               | 61,598              | 4.22                                    |
| 1910 <sup>3</sup> ..... | 58,188              | -----                                   | 1922.....               | 59,849              | 10.58                                   | 1934.....               | 57,177              | 4.14                                    |
| 1910.....               | 49,300              | 9.69                                    | 1923.....               | 69,304              | 12.29                                   | 1935 <sup>4</sup> ..... | 37,007              | 6.41                                    |
| 1911.....               | 55,700              | 9.90                                    | 1924.....               | 66,576              | 10.30                                   |                         |                     |   |

<sup>1</sup> Figures for 1900–1919 are tentative revised estimates of the Bureau of Agricultural Economics.

<sup>2</sup> Data for 1900–1925 are an old series for all hogs as reported, adjusted on basis average relationship between the new and the old series for 1926–28. Old series was shown in 1928 Yearbook. Conversion factor was 1.057 (base was old series). Data for 1926–35 are a new series, referred to above, of average values by age and sex classification weighted by numbers in each class.

<sup>3</sup> Italic figures are from the census. Census dates were June 1, 1900; Apr. 15, 1910; Jan. 1, 1920, and 1925; Apr. 1, 1930. 1900, 1910, and 1930 include spring-born pigs.

<sup>4</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 335.—Hogs: Numbers in countries having 150,000 and over, averages 1921–25 and 1926–30, annual 1930–33

| Country                                   | Date or month of estimates   | Average                   |                           | 1930                      | 1931                      | 1932                      | 1933                                   |
|---|------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|--|
|   |                              | 1921-25 <sup>1</sup>      | 1926-30 <sup>1</sup>      |                           |                           |                           |  |
| NORTH AND CENTRAL AMERICA AND WEST INDIES |                              |                           |                           |                           |                           |                           |  |
| United States.....                        | January 1.....               | Thou-<br>sands<br>62, 088 | Thou-<br>sands<br>56, 683 | Thou-<br>sands<br>55, 301 | Thou-<br>sands<br>54, 399 | Thou-<br>sands<br>58, 988 | Thou-<br>sands<br>61, 598 <sup>2</sup> |
| Canada.....                               | June.....                    | 4, 344                    | 4, 387                    | 4, 000                    | 4, 717                    | 4, 639                    | 3, 801                                 |
| Mexico.....                               | do.....                      | <sup>3</sup> 1, 125       | 3, 300                    | <sup>4</sup> 3, 698       |                           |                           |  |
| Honduras.....                             |                              | (200)                     | 298                       | 298                       |                           |                           |  |
| Salvador.....                             |                              | (330)                     | 335                       | <sup>4</sup> 335          |                           |                           |  |
| Cuba.....                                 |                              | (591)                     | 591                       | 591                       |                           |                           |  |
| Dominican Republic.....                   | May.....                     | 866                       | 1, 100                    | 1, 100                    |                           |                           |  |
| Haiti.....                                |                              | (170)                     | 203                       | 240                       | 260                       | 250                       | 350                                    |
| Estimated total <sup>2</sup> .....        |                              | 70, 300                   | 67, 600                   |                           |                           |                           |  |
| SOUTH AMERICA                             |                              |                           |                           |                           |                           |                           |  |
| Colombia.....                             |                              | 1, 352                    | 1, 400                    | 1, 434                    |                           | 1, 600                    |  |
| Venezuela.....                            |                              | 512                       | (512)                     |                           |                           |                           |  |
| Ecuador.....                              |                              | 150                       | 153                       |                           | 200                       |                           |  |
| Peru.....                                 | February-April.....          | 429                       | <sup>4</sup> 689          | <sup>6</sup> 689          |                           |                           |  |
| Bolivia.....                              |                              | 362                       | 375                       | 390                       | 398                       |                           |  |
| Chile.....                                |                              | 255                       | <sup>4</sup> 331          | <sup>4</sup> 331          |                           |                           |  |
| Brazil.....                               | September.....               | <sup>4</sup> 16, 169      | (22, 099)                 |                           | 22, 099                   | 21, 615                   |  |
| Uruguay.....                              |                              | 273                       | 308                       | <sup>4</sup> 308          |                           |                           |  |
| Argentina.....                            | January 1 <sup>3</sup> ..... | <sup>4</sup> 1, 437       | <sup>4</sup> 3, 769       | <sup>4</sup> 3, 769       |                           |                           |  |
| Estimated total <sup>2</sup> .....        |                              | 21, 000                   | 29, 800                   |                           |                           |                           |  |
| EUROPE                                    |                              |                           |                           |                           |                           |                           |  |
| England and Wales.....                    | June.....                    | 2, 658                    | 2, 508                    | 2, 310                    | 2, 783                    | 3, 185                    | 3, 069                                 |
| Scotland.....                             | do.....                      | 167                       | 165                       | 143                       | 162                       | 165                       | 167                                    |
| Northern Ireland.....                     | do.....                      | 134                       | 206                       | 216                       | 236                       | 220                       | 271                                    |
| Irish Free State.....                     | do.....                      | 947                       | 1, 048                    | 1, 052                    | 1, 227                    | 1, 108                    | 931                                    |
| Norway <sup>10</sup> .....                | do.....                      | 216                       | 303                       | 339                       | 317                       | 304                       | 319                                    |
| Sweden.....                               | September or October.....    | <sup>9</sup> 1, 056       | 1, 574                    | 1, 761                    | 1, 724                    | 1, 462                    | 1, 713                                 |
| Denmark.....                              | July.....                    | 2, 314                    | 3, 741                    | 4, 872                    | 5, 453                    | <sup>11</sup> 4, 886      | <sup>11</sup> 4, 407                   |
| Netherlands.....                          | May-June.....                | 1, 519                    | 2, 018                    | 2, 018                    | <sup>12</sup> 2, 434      | <sup>12</sup> 2, 244      | <sup>12</sup> 2, 112                   |
| Belgium.....                              | January 1 <sup>8</sup> ..... | 1, 081                    | 1, 159                    | 1, 237                    | 1, 250                    | 1, 235                    | 1, 246                                 |
| France.....                               | do. <sup>9</sup> .....       | 5, 302                    | 5, 942                    | 6, 102                    | 6, 329                    | 6, 398                    | 6, 488                                 |
| Spain.....                                | do. <sup>9</sup> .....       | 4, 500                    | 5, 024                    |                           |                           | 5, 102                    |  |
| Portugal.....                             |                              | 1, 041                    | <sup>4</sup> 1, 163       | <sup>6</sup> 1, 163       |                           |                           |  |
| Italy.....                                | May-April.....               | 2, 630                    | 3, 086                    | <sup>4</sup> 3, 322       |                           |                           |  |
| Switzerland.....                          | April.....                   | <sup>4</sup> 640          | 782                       | (928)                     | <sup>4</sup> 926          |                           | <sup>4</sup> 897                       |
| Germany.....                              | January 1 <sup>8</sup> ..... | 15, 776                   | 19, 715                   | 19, 944                   | 23, 442                   | 23, 808                   | <sup>14</sup> 22, 859                  |
| Austria.....                              | do. <sup>9</sup> .....       | 1, 399                    | 1, 965                    | <sup>4</sup> 1, 965       |                           |                           |  |
| Czechoslovakia.....                       | do. <sup>9</sup> .....       | 2, 201                    | 2, 814                    | <sup>4</sup> 15, 3, 088   | 2, 776                    | 2, 576                    | <sup>16</sup> 2, 621                   |

See footnotes at end of table.

TABLE 335.—*Hogs: Numbers in countries having 150,000 and over, averages 1921-25 and 1926-30, annual 1930-33—Continued*

| Country   | Date or month of estimates   | Average                  |                          | 1930                     | 1931                     | 1932                     | 1933                     |
|---|------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|   |                              | 1921-25 <sup>1</sup>     | 1926-30 <sup>1</sup>     |                          |                          |                          |                          |
| EUROPE—continued  |                              |                          |                          |                          |                          |                          |                          |
| Hungary.....  | April-July.....              | Thous-<br>sands<br>2,424 | Thous-<br>sands<br>2,503 | Thous-<br>sands<br>2,362 | Thous-<br>sands<br>2,715 | Thous-<br>sands<br>2,361 | Thous-<br>sands<br>1,899 |
| Yugoslavia.....   | January 1.....               | 2,819                    | 2,743                    | (2,675)                  | 2,924                    | 3,133                    | 2,863                    |
| Greece.....   | January 1 <sup>2</sup> ..... | 390                      | 422                      | 4276                     | 335                      | 423                      | 472                      |
| Bulgaria.....   | do. <sup>3</sup> .....       | 532                      | 1,002                    | 6 1,002                  |                          |                          |                          |
| Rumania.....  | do. <sup>3</sup> .....       | 2,976                    | 2,915                    | 2,412                    | 12 2,437                 | 3,221                    | 2,964                    |
| Poland.....   | June.....                    | 17 5,287                 | 5,736                    | 6,047                    | 7,321                    | 5,844                    | 5,753                    |
| Lithuania.....  | January 1 <sup>4</sup> ..... | 1,486                    | 1,189                    | 944                      | 1,207                    | 1,338                    | 1,233                    |
| Latvia.....   | June.....                    | 465                      | 499                      | 523                      | 712                      | 582                      | 586                      |
| Estonia.....  | July.....                    | 299                      | 317                      | 290                      | 323                      | 303                      | 277                      |
| Finland.....  | September.....               | 378                      | 404                      | 395                      | 446                      | 414                      |                          |
| Union of Soviet Socialist Re-<br>publics.....   | Summer.....                  | 17,680                   | 21,040                   | 13,600                   | 14,400                   | 11,600                   | 12,068                   |
| Estimated total exclud-<br>ing Union of Soviet<br>Socialist Republics <sup>5</sup> .....        |                              | 61,000                   | 71,100                   |                          |                          |                          |                          |
| AFRICA  |                              |                          |                          |                          |                          |                          |                          |
| French West Africa <sup>18</sup> .....  |                              | 151                      | 210                      | 180                      | 177                      |                          |                          |
| Angola.....   | April.....                   | 266                      | 285                      | 272                      | 287                      |                          |                          |
| Union of South Africa.....  | August.....                  | 888                      | 888                      | 963                      |                          |                          |                          |
| Madagascar.....   | February.....                | 369                      | 375                      | 415                      | 479                      | 491                      |                          |
| Estimated total <sup>6</sup> .....  |                              | 2,300                    | 2,500                    |                          |                          |                          |                          |
| ASIA  |                              |                          |                          |                          |                          |                          |                          |
| India (Portuguese).....   |                              | (250)                    | 250                      | 6 250                    |                          |                          |                          |
| China (including Turkistan,<br>Manchuria, and Inner Mon-<br>golia).....                         |                              | 19 70,600                | (80,000)                 |                          |                          |                          | 20 95,000                |
| Japan.....  | January 1 <sup>7</sup> ..... | 590                      | 688                      | 706                      | 742                      | 947                      | 926                      |
| Chosen.....   | do. <sup>8</sup> .....       | 1,078                    | 1,244                    | 1,328                    | 1,387                    | 1,348                    | 1,339                    |
| Taiwan.....   | do. <sup>8</sup> .....       | 1,302                    | 1,619                    | 1,754                    | 1,750                    | 1,739                    | 1,754                    |
| French Indo-China.....  |                              | 2,767                    | 2,587                    | 2,808                    | 2,925                    | 2,989                    |                          |
| Siam.....   | March.....                   | 864                      | (864)                    |                          |                          |                          |                          |
| Federated Malay States.....   |                              | 59                       | 96                       | 166                      | 190                      |                          |                          |
| Straits Settlements.....  |                              | 220                      | 132                      | 120                      | 105                      |                          |                          |
| Philippine Islands.....   | January 1 <sup>9</sup> ..... | 2,039                    | 2,236                    | 2,454                    | 2,775                    | 2,491                    |                          |
| Netherlands Indies: Outer pos-<br>sessions.....   | do. <sup>8</sup> .....       | 783                      | 842                      |                          |                          |                          | 995                      |
| Estimated total excluding<br>Union of Soviet Social-<br>ist Republics. <sup>5</sup> .....       |                              | 81,100                   | 91,000                   |                          |                          |                          |                          |
| OCEANIA   |                              |                          |                          |                          |                          |                          |                          |
| Australia.....  | January 1 <sup>8</sup> ..... | 918                      | 985                      | 1,018                    | 1,072                    | 1,168                    | 1,162                    |
| New Zealand.....  | January 1.....               | 396                      | 525                      | 488                      | 476                      | 513                      | 592                      |
| Estimated total <sup>6</sup> .....  |                              | 1,400                    | 1,600                    |                          |                          |                          |                          |
| Total countries reporting all<br>periods: To 1933 (29) <sup>21</sup> .....                      |                              | 138,083                  | 144,891                  | 137,046                  | 145,310                  | 145,988                  | 145,840                  |
| Estimated world total in-<br>cluding Union of Soviet<br>Socialist Republics <sup>22</sup> ..... |                              | 254,800                  | 284,600                  |                          |                          |                          |                          |

<sup>1</sup> Average for 5-year period if available, otherwise for any year or years within that period unless otherwise stated. <sup>2</sup> Number on Jan. 1, 1934, was 57,177,000 head. <sup>3</sup> Incomplete. <sup>4</sup> Census.

<sup>5</sup> These totals include interpolations for a few countries not reporting each year and rough estimates for some others. <sup>6</sup> Year 1929 or nearest year. <sup>7</sup> Year 1920.

<sup>8</sup> Estimates of countries reporting as of December are considered as of Jan. 1, of following year, i.e., the figures for the number of hogs in France as of Dec. 31, 1929, have been placed in 1930 column, etc.

<sup>9</sup> June. <sup>10</sup> Rural communities only. <sup>11</sup> June 20. <sup>12</sup> Unofficial. <sup>13</sup> Apr. 18.

<sup>14</sup> Number on Jan. 1, 1934, was 23,890,000 head.

<sup>15</sup> May.

<sup>16</sup> Number on Jan. 1, 1934, was 3,421,000 head.

<sup>17</sup> November.

<sup>18</sup> Includes French Sudan.

<sup>19</sup> Estimate based on official figures for 1920 for 20 Provinces which supported over 50 percent of the number in China in 1914.

<sup>20</sup> Estimate based on official figures for 1932 or 1933 for 22 Provinces which supported over 99 percent of the number in China in 1914. The official estimate excluding Turkistan and Inner Mongolia in 1932 or 1933 was 94,395,000. Estimates for this territory and for Manchuria included with China in this table.

<sup>21</sup> Comparable totals for number of countries indicated in parenthesis.

<sup>22</sup> Estimated world production for the 5 years 1909-13 was as follows (in thousands of head): North America, Central America, and West Indies, 59,700; South America, 23,500; Europe, excluding Union of Soviet Socialist Republics, 71,800; Africa, 2,500; Asia, excluding Union of Soviet Socialist Republics, 86,200; Oceania, 1,400; world including Union of Soviet Socialist Republics, 266,000.

Bureau of Agricultural Economics; official estimates and International Institute of Agriculture unless otherwise stated.

Figures in parenthesis interpolated. For later figures see the monthly issues of Hog and Pork Prospects and the hog and pork issue of Foreign Crops and Markets.

TABLE 336.—*Hogs: Receipts at principal public stockyards and at public stockyards, 1925-34*

| Year                    | Chi-<br>cago           | Den-<br>ver            | East<br>St.<br>Louis   | Fort<br>Worth          | Kan-<br>sas<br>City    | Oma-<br>ha             | South<br>St.<br>Joseph | South<br>St.<br>Paul   | Sioux<br>City          | Total<br>9 mar-<br>kets <sup>1</sup> | All<br>other<br>stock-<br>yards<br>repor-<br>ting | Total<br>all<br>stock-<br>yards<br>repor-<br>ting <sup>1</sup> |
|-------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|--------------------------------------|---|--|
|                         | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i>               | <i>Thou-<br/>sands</i>                            | <i>Thou-<br/>sands</i>   |
| 1925.....               | 7,995                  | 467                    | 3,512                  | 312                    | 2,067                  | 3,355                  | 1,673                  | 3,637                  | 3,396                  | 26,415                               | 17,514  | 43,929   |
| 1926.....               | 7,093                  | 497                    | 3,536                  | 217                    | 2,036                  | 2,647                  | 1,462                  | 3,451                  | 2,475                  | 23,413                               | 16,359  | 39,772   |
| 1927.....               | 7,724                  | 457                    | 3,710                  | 338                    | 1,904                  | 2,631                  | 1,425                  | 3,105                  | 2,322                  | 23,616                               | 17,795  | 41,411   |
| 1928.....               | 8,559                  | 567                    | 4,036                  | 432                    | 2,391                  | 3,179                  | 1,724                  | 2,902                  | 2,754                  | 26,525                               | 20,002  | 46,527   |
| 1929.....               | 8,193                  | 539                    | 3,865                  | 402                    | 2,476                  | 3,166                  | 1,627                  | 2,869                  | 2,313                  | 25,450                               | 18,647  | 44,097   |
| 1930.....               | 7,870                  | 512                    | 3,459                  | 279                    | 2,015                  | 3,363                  | 1,446                  | 2,759                  | 2,317                  | 24,021                               | 16,753  | 40,774   |
| 1931.....               | 7,942                  | 597                    | 2,970                  | 216                    | 1,337                  | 3,525                  | 1,322                  | 3,251                  | 2,646                  | 23,805                               | 15,733  | 39,538   |
| 1932.....               | 6,602                  | 652                    | 2,626                  | 265                    | 1,356                  | 3,078                  | 1,226                  | 2,600                  | 1,955                  | 20,351                               | 14,677  | 35,028   |
| 1933 <sup>2</sup> ..... | 7,792                  | 771                    | 3,328                  | 277                    | 2,077                  | 2,950                  | 1,715                  | 2,742                  | 2,287                  | 24,160                               | 16,217  | 40,377   |
| 1934.....               | 6,510                  | 709                    | 2,960                  | 498                    | 1,262                  | 2,808                  | 1,594                  | 1,885                  | 2,067                  | 20,199                               | 13,521  | 33,720   |

<sup>1</sup> Rounded totals of complete figures.<sup>2</sup> Includes many pigs and sows received for sale on Government account, Aug. 22-Oct. 7, 1933.

Bureau of Agricultural Economics; compiled from data of the livestock and meat reporting service of the Bureau.

Receipts for 1900-1924 are available in 1924 Yearbook, table 500.

TABLE 337.—*Hogs: Receipts at United States public stockyards, 1925-34*

| Year                    | Jan.                   | Feb.                   | Mar.                   | Apr.                   | May                    | June                   | July                   | Aug.                   | Sept.                  | Oct.                   | Nov.                   | Dec.                   | Total                  |
|-------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|                         | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> |
| 1925.....               | 6,105                  | 4,558                  | 3,528                  | 3,247                  | 3,283                  | 3,507                  | 2,798                  | 2,549                  | 2,741                  | 3,390                  | 3,843                  | 4,380                  | 43,929                 |
| 1926.....               | 4,304                  | 3,372                  | 3,379                  | 3,135                  | 3,037                  | 3,143                  | 2,854                  | 2,504                  | 2,819                  | 3,261                  | 3,554                  | 3,910                  | 39,772                 |
| 1927.....               | 4,252                  | 3,308                  | 3,754                  | 3,142                  | 3,613                  | 3,775                  | 3,046                  | 3,042                  | 2,565                  | 3,089                  | 3,066                  | 4,209                  | 41,411                 |
| 1928.....               | 5,306                  | 5,267                  | 4,659                  | 3,483                  | 3,723                  | 3,543                  | 2,924                  | 2,523                  | 2,600                  | 3,666                  | 4,075                  | 4,773                  | 46,527                 |
| 1929.....               | 5,133                  | 4,000                  | 3,436                  | 3,582                  | 3,431                  | 3,275                  | 3,297                  | 2,964                  | 3,089                  | 3,701                  | 3,933                  | 4,256                  | 44,097                 |
| 1930.....               | 4,720                  | 3,781                  | 3,294                  | 3,265                  | 3,298                  | 3,215                  | 2,918                  | 2,617                  | 2,799                  | 3,441                  | 3,439                  | 4,002                  | 40,774                 |
| 1931.....               | 4,652                  | 3,704                  | 3,207                  | 3,067                  | 2,936                  | 2,854                  | 2,511                  | 2,454                  | 2,727                  | 3,462                  | 3,752                  | 4,210                  | 39,538                 |
| 1932.....               | 4,218                  | 3,659                  | 2,939                  | 2,960                  | 3,050                  | 2,545                  | 2,159                  | 2,405                  | 2,505                  | 2,691                  | 2,775                  | 3,125                  | 35,028                 |
| 1933 <sup>1</sup> ..... | 3,398                  | 2,700                  | 2,638                  | 2,798                  | 3,143                  | 3,351                  | 2,871                  | 3,924                  | 6,494                  | 2,521                  | 3,207                  | 3,332                  | 40,377                 |
| 1934.....               | 4,245                  | 2,728                  | 2,468                  | 2,674                  | 3,076                  | 2,684                  | 2,519                  | 2,067                  | 2,094                  | 2,807                  | 3,218                  | 3,140                  | 33,720                 |

<sup>1</sup> Includes many pigs and sows received for sale on Government account, Aug. 22-Oct. 7, 1933.

Bureau of Agricultural Economics; compiled from data of the livestock and meat reporting service of the Bureau. Earlier data in 1930 Yearbook, table 376.

TABLE 338.—*Hogs: Monthly average live weight at Chicago, 1925-26 to 1934-35*

| Year         | Oct.       | Nov.       | Dec.       | Jan.       | Feb.       | Mar.       | Aver-<br>age,<br>Oct.-<br>Mar. <sup>1</sup> | Apr.       | May        | June       | July       | Aug.       | Sept.      | Aver-<br>age,<br>Apr.-<br>Sept. <sup>1</sup> |
|--------------|------------|------------|------------|------------|------------|------------|---|------------|------------|------------|------------|------------|------------|--|
|              | <i>Lb.</i> | <i>Lb.</i> | <i>Lb.</i> | <i>Lb.</i> | <i>Lb.</i> | <i>Lb.</i> | <i>Lb.</i>                                  | <i>Lb.</i> | <i>Lb.</i> | <i>Lb.</i> | <i>Lb.</i> | <i>Lb.</i> | <i>Lb.</i> | <i>Lb.</i>                                   |
| 1925-26..... | 242        | 228        | 225        | 231        | 235        | 245        | 234   | 244        | 247        | 255        | 271        | 281        | 287        | 261  |
| 1926-27..... | 232        | 217        | 220        | 226        | 229        | 240        | 227   | 239        | 243        | 248        | 257        | 265        | 261        | 252  |
| 1927-28..... | 235        | 215        | 217        | 225        | 230        | 235        | 226   | 233        | 234        | 239        | 251        | 257        | 251        | 244  |
| 1928-29..... | 247        | 238        | 231        | 228        | 228        | 238        | 235   | 241        | 239        | 247        | 257        | 265        | 259        | 251  |
| 1929-30..... | 242        | 223        | 224        | 228        | 231        | 235        | 230   | 234        | 238        | 245        | 257        | 255        | 244        | 246  |
| 1930-31..... | 227        | 221        | 226        | 235        | 237        | 242        | 231   | 240        | 240        | 251        | 258        | 256        | 240        | 248  |
| 1931-32..... | 222        | 217        | 223        | 230        | 233        | 237        | 227   | 238        | 239        | 245        | 260        | 263        | 260        | 251  |
| 1932-33..... | 241        | 231        | 229        | 233        | 236        | 246        | 236   | 251        | 250        | 253        | 257        | 258        | 251        | 253  |
| 1933-34..... | 239        | 231        | 227        | 227        | 227        | 235        | 231   | 231        | 238        | 248        | 250        | 245        | 245        | 240  |
| 1934-35..... | 228        | 215        | 212        | -----      | -----      | -----      | -----                                       | -----      | -----      | -----      | -----      | -----      | -----      | -----  |

<sup>1</sup> Simple average.

Bureau of Agricultural Economics; livestock and meat reporting service.

Weighted average of packer and shipper purchases. Data for 1900-1923 are available in 1924 Yearbook, table 506, and for 1924 in 1934 Yearbook, table 338.

TABLE 339.—Hogs: Average price per 100 pounds received by producers, United States, 1925-26 to 1934-35

| Year         | Oct.<br>15  | Nov.<br>15  | Dec.<br>15  | Jan.<br>15  | Feb.<br>15  | Mar.<br>15  | Apr.<br>15  | May<br>15   | June<br>15  | July<br>15  | Aug.<br>15  | Sept.<br>15 | Weighted<br>average |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------------|
|              | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i>         |
| 1925-26..... | 11.16       | 10.66       | 10.51       | 10.99       | 11.76       | 11.65       | 11.49       | 11.97       | 12.80       | 12.69       | 11.66       | 12.07       | 11.55               |
| 1926-27..... | 12.06       | 11.45       | 10.97       | 10.97       | 11.19       | 10.89       | 10.41       | 9.41        | 8.40        | 8.58        | 9.24        | 9.78        | 10.28               |
| 1927-28..... | 10.16       | 8.99        | 8.14        | 7.80        | 7.61        | 7.48        | 7.75        | 8.82        | 8.70        | 9.64        | 10.01       | 11.17       | 8.59                |
| 1928-29..... | 9.55        | 8.51        | 7.95        | 8.18        | 8.88        | 10.00       | 10.20       | 9.96        | 9.80        | 10.33       | 10.28       | 9.53        | 9.28                |
| 1929-30..... | 9.10        | 8.54        | 8.53        | 8.80        | 9.48        | 9.57        | 9.17        | 8.99        | 9.10        | 8.38        | 8.51        | 9.44        | 8.95                |
| 1930-31..... | 8.79        | 8.20        | 7.44        | 7.25        | 6.81        | 6.92        | 6.92        | 6.35        | 5.70        | 6.20        | 6.25        | 5.44        | 6.95                |
| 1931-32..... | 4.70        | 4.36        | 3.76        | 3.76        | 3.53        | 3.90        | 3.58        | 2.96        | 2.82        | 4.23        | 4.06        | 3.78        | 3.78                |
| 1932-33..... | 3.25        | 3.05        | 2.73        | 2.68        | 2.94        | 3.22        | 3.21        | 3.88        | 3.96        | 3.98        | 3.79        | 3.73        | 3.36                |
| 1933-34..... | 4.17        | 3.70        | 2.92        | 3.06        | 3.87        | 3.88        | 3.49        | 3.17        | 3.52        | 3.97        | 4.61        | 6.04        | 3.73                |
| 1934-35..... | 5.20        | 5.04        | 5.15        |             |             |             |             |             |             |             |             |             |                     |

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by number of hogs Jan. 1, to obtain price for the United States; yearly price obtained by weighting monthly prices by Federally-inspected slaughter. Data for earlier years in 1928 Yearbook, table 382. Only monthly prices are comparable.

TABLE 340.—Hogs: Average price per 100 pounds at Chicago, by months, 1925-26 to 1934-35

| Year         | Oct.        | Nov.        | Dec.        | Jan.        | Feb.        | Mar.        | Apr.        | May         | June        | July        | Aug.        | Sept.       | Simple<br>average |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|
|              | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i>       |
| 1925-26..... | 11.31       | 11.28       | 10.97       | 12.02       | 12.45       | 12.20       | 12.33       | 13.55       | 14.01       | 12.51       | 11.48       | 12.03       | 12.18             |
| 1926-27..... | 12.72       | 11.80       | 11.57       | 11.96       | 11.73       | 11.28       | 10.69       | 9.59        | 8.78        | 9.05        | 9.03        | 10.22       | 10.70             |
| 1927-28..... | 10.39       | 8.92        | 8.32        | 8.25        | 8.08        | 8.08        | 9.28        | 9.67        | 9.81        | 10.65       | 11.53       | 11.89       | 9.56              |
| 1928-29..... | 9.57        | 8.83        | 8.61        | 9.22        | 10.19       | 11.44       | 11.41       | 10.81       | 10.72       | 11.20       | 10.52       | 9.85        | 10.20             |
| 1929-30..... | 9.38        | 9.06        | 9.34        | 9.78        | 10.67       | 10.17       | 10.00       | 10.02       | 9.52        | 8.73        | 9.58        | 9.76        | 9.67              |
| 1930-31..... | 9.34        | 8.55        | 7.92        | 7.65        | 7.06        | 7.46        | 7.26        | 6.53        | 6.30        | 6.33        | 5.98        | 5.41        | 7.15              |
| 1931-32..... | 5.09        | 4.61        | 4.20        | 4.00        | 3.89        | 4.33        | 4.85        | 3.34        | 3.62        | 4.58        | 4.21        | 4.00        | 4.14              |
| 1932-33..... | 3.60        | 3.34        | 3.04        | 3.12        | 3.46        | 3.88        | 3.77        | 4.51        | 4.49        | 4.41        | 3.97        | 4.24        | 3.81              |
| 1933-34..... | 4.43        | 4.04        | 3.25        | 3.41        | 4.39        | 4.31        | 3.85        | 3.51        | 4.09        | 4.49        | 5.89        | 6.82        | 4.37              |
| 1934-35..... | 5.60        | 5.66        | 5.89        |             |             |             |             |             |             |             |             |             |                   |

Bureau of Agricultural Economics. Compiled from reports of packer and shipper purchases; such purchases do not include pigs, boars, stags, extremely rough sows, or cripples. The yearly figures are the simple average of the October to September prices. These weighted prices do not include processing tax. Tax of 50 cents per 100 pounds was imposed from Nov. 5 to Nov. 30, 1933; \$1 from Dec. 1, 1933, to Jan. 31, 1934; \$1.50 from Feb. 1 to Feb. 28; and \$2.25 beginning Mar. 1, 1934.

Data for 1901-24 are available in 1932 Yearbook, table 336.

TABLE 341.—Hogs: Annual slaughter under Federal inspection, 1907-34, estimated equivalent of Federal inspection, 1900-1906, and estimated total slaughter (including farm) in United States, 1900-1934<sup>1</sup>

| Year      | Federally<br>inspected | Total <sup>2</sup>     | Year      | Federally<br>inspected | Total <sup>2</sup>     | Year      | Federally<br>inspected | Total <sup>2</sup>     |
|-----------|------------------------|------------------------|-----------|------------------------|------------------------|-----------|------------------------|------------------------|
|           | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> |           | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> |           | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> |
| 1900..... | 29,294                 | 50,470                 | 1912..... | 33,058                 | 55,564                 | 1924..... | 52,873                 | 79,631                 |
| 1901..... | 31,129                 | 51,870                 | 1913..... | 34,199                 | 57,046                 | 1925..... | 45,043                 | 68,294                 |
| 1902..... | 26,375                 | 48,260                 | 1914..... | 32,532                 | 55,501                 | 1926..... | 40,636                 | 65,779                 |
| 1903..... | 26,971                 | 47,900                 | 1915..... | 38,381                 | 62,017                 | 1927..... | 43,633                 | 69,250                 |
| 1904..... | 30,072                 | 49,987                 | 1916..... | 43,084                 | 67,613                 | 1928..... | 49,795                 | 76,593                 |
| 1905..... | 31,855                 | 51,540                 | 1917..... | 39,910                 | 59,901                 | 1929..... | 48,445                 | 74,945                 |
| 1906..... | 31,610                 | 52,890                 | 1918..... | 41,214                 | 64,796                 | 1930..... | 44,266                 | 70,390                 |
| 1907..... | 32,855                 | 54,058                 | 1919..... | 41,813                 | 65,190                 | 1931..... | 44,772                 | 71,157                 |
| 1908..... | 35,643                 | 60,515                 | 1920..... | 38,019                 | 61,890                 | 1932..... | 45,245                 | 74,021                 |
| 1909..... | 31,365                 | 53,220                 | 1921..... | 38,682                 | 62,957                 | 1933..... | 47,226                 |                        |
| 1910..... | 26,014                 | 47,076                 | 1922..... | 42,114                 | 68,105                 | 1934..... | 43,873                 |                        |
| 1911..... | 34,133                 | 56,646                 | 1923..... | 53,334                 | 79,843                 |           |                        |                        |

<sup>1</sup> Federal Meat Inspection Act, effective Oct. 1, 1906.

<sup>2</sup> Subject to revision.

Bureau of Animal Industry and Bureau of Agricultural Economics.  
Data for years 1880-99 last printed in 1933 Yearbook, table 330.

TABLE 342.—Hogs: Shipments, slaughter, value of production, and income, by States, 1933

| State and division | Shipments and local slaughter |              | A. A. A. purchases <sup>1</sup> |              | Inshipments, stocker, feeding, and breeding |              | Farm slaughter |              | Value of amount consumed on farms | Receipts from sales | Gross income  | Value of production |
|--------------------|-------------------------------|--------------|---------------------------------|--------------|---|--------------|----------------|--------------|-----------------------------------|---------------------|---------------|---------------------|
|                    | Head                          | Total weight | Head                            | Total weight | Head  | Total weight | Head           | Total weight |                                   |                     |               |                     |
|                    | Thousands                     | 1,000 pounds | Thousands                       | 1,000 pounds | Thousands                                   | 1,000 pounds | Thousands      | 1,000 pounds | 1,000 dollars                     | 1,000 dollars       | 1,000 dollars | 1,000 dollars       |
| Maine.....         | 24                            | 6,240        |                                 |              |   |              | 27             | 7,290        | 178                               | 517                 | 693           | 615                 |
| N. H.....          | 8                             | 2,080        |                                 |              |   |              | 8              | 2,160        | 43                                | 149                 | 192           | 164                 |
| Vt.....            | 16                            | 4,160        |                                 |              |   |              | 27             | 7,020        | 143                               | 392                 | 535           | 450                 |
| Mass.....          | 56                            | 14,560       |                                 |              | 4   | 400          | 35             | 9,100        | 198                               | 857                 | 1,053         | 915                 |
| R. I.....          | 1                             | 250          |                                 |              |   |              | 5              | 1,250        | 31                                | 51                  | 82            | 79                  |
| Conn.....          | 8                             | 2,080        |                                 |              |   |              | 23             | 5,980        | 151                               | 282                 | 433           | 370                 |
| N. Y.....          | 78                            | 17,940       | 2                               | 104          | 4   | 400          | 160            | 38,080       | 900                               | 1,714               | 2,414         | 2,343               |
| N. J.....          | 57                            | 11,950       | 2                               | 85           | 18  | 2,250        | 40             | 10,000       | 293                               | 682                 | 975           | 888                 |
| Pa.....            | 262                           | 60,260       | 1                               | 84           |   |              | 360            | 90,000       | 2,683                             | 4,407               | 7,090         | 6,503               |
| N. Atl.....        | 510                           | 119,520      | 5                               | 273          | 26  | 3,050        | 685            | 170,880      | 4,616                             | 9,051               | 13,667        | 12,336              |
| Ohio.....          | 3,701                         | 851,230      | 406                             | 25,327       | 2   | 220          | 600            | 150,000      | 5,155                             | 36,533              | 41,688        | 40,748              |
| Ind.....           | 4,867                         | 1,143,745    | 357                             | 25,373       | 11  | 1,320        | 530            | 132,500      | 4,806                             | 46,804              | 51,610        | 51,793              |
| Ill.....           | 6,581                         | 1,605,764    | 577                             | 46,592       | 51  | 5,865        | 650            | 162,500      | 5,411                             | 63,008              | 68,414        | 65,862              |
| Mich.....          | 670                           | 137,350      | 77                              | 5,254        | 16  | 1,600        | 310            | 74,400       | 1,814                             | 6,716               | 8,530         | 7,944               |
| Wis.....           | 1,729                         | 380,380      | 168                             | 12,207       | 1   | 100          | 490            | 110,250      | 3,043                             | 14,952              | 17,995        | 16,608              |
| E. N. Cent.        | 17,548                        | 4,118,469    | 1,585                           | 114,753      | 81  | 9,105        | 2,580          | 629,650      | 20,229                            | 168,008             | 188,237       | 183,015             |
| Minn.....          | 4,522                         | 1,017,450    | 469                             | 32,774       | 329   | 30,190       | 430            | 94,600       | 2,725                             | 35,132              | 37,857        | 36,450              |
| Iowa.....          | 11,874                        | 2,790,390    | 616                             | 59,475       | 230   | 26,450       | 625            | 153,125      | 4,952                             | 94,514              | 99,466        | 99,612              |
| Mo.....            | 5,085                         | 1,154,295    | 786                             | 50,337       | 38  | 4,180        | 650            | 162,500      | 5,250                             | 45,066              | 50,316        | 48,022              |
| N. Dak.....        | 587                           | 135,010      | 239                             | 13,766       |   |              | 233            | 55,920       | 1,451                             | 5,049               | 6,500         | 5,422               |
| S. Dak.....        | 2,613                         | 454,662      | 808                             | 47,098       | 4   | 460          | 220            | 51,700       | 1,548                             | 17,858              | 19,436        | 15,462              |
| Nebr.....          | 5,265                         | 1,316,250    | 473                             | 38,700       | 111   | 11,100       | 340            | 86,700       | 2,733                             | 44,822              | 47,555        | 46,471              |
| Kans.....          | 3,200                         | 704,000      | 699                             | 43,255       | 57  | 6,555        | 400            | 100,000      | 3,162                             | 27,006              | 30,168        | 26,810              |
| W. N. Cent.        | 33,146                        | 7,572,057    | 4,089                           | 285,425      | 769   | 84,935       | 2,898          | 704,545      | 21,821                            | 269,477             | 291,298       | 277,829             |
| N. Cent.....       | 50,694                        | 11,690,526   | 5,674                           | 400,178      | 850   | 94,040       | 5,478          | 1,334,195    | 42,050                            | 437,485             | 479,535       | 460,844             |
| Del.....           | 4                             | 780          |                                 |              |   |              | 19             | 3,800        | 108                               | 125                 | 233           | 220                 |
| Md.....            | 55                            | 9,625        | 5                               | 261          |   |              | 155            | 37,200       | 1,311                             | 840                 | 2,151         | 2,110               |
| Va.....            | 167                           | 36,740       | 20                              | 1,094        | 2   | 200          | 575            | 143,750      | 4,713                             | 2,781               | 7,494         | 7,220               |
| W. Va.....         | 38                            | 5,700        | 8                               | 477          | 2   | 200          | 210            | 52,500       | 1,825                             | 908                 | 2,733         | 2,548               |
| N. C.....          | 186                           | 37,200       | 4                               | 248          |   |              | 715            | 157,300      | 5,817                             | 2,970               | 8,787         | 8,167               |
| S. C.....          | 129                           | 24,720       | 3                               | 141          |   |              | 400            | 84,000       | 3,119                             | 1,245               | 4,364         | 3,938               |
| Ge.....            | 288                           | 43,200       | 11                              | 579          |   |              | 1,030          | 221,450      | 6,377                             | 2,343               | 8,720         | 8,478               |
| Fla.....           | 179                           | 26,850       | 6                               | 344          |   |              | 300            | 42,000       | 806                               | 1,580               | 2,386         | 2,129               |
| S. Atl.....        | 1,046                         | 184,795      | 57                              | 3,144        | 4   | 400          | 3,404          | 742,000      | 24,076                            | 12,792              | 36,868        | 34,810              |
| Ky.....            | 625                           | 115,625      | 58                              | 3,824        | 7   | 525          | 850            | 162,500      | 5,372                             | 5,686               | 11,058        | 10,581              |
| Tenn.....          | 537                           | 105,400      | 26                              | 1,487        | 2   | 250          | 650            | 169,000      | 5,087                             | 4,866               | 9,053         | 8,291               |
| Ala.....           | 218                           | 34,880       | 4                               | 214          | 1   | 150          | 600            | 120,000      | 3,354                             | 1,853               | 5,207         | 4,591               |
| Miss.....          | 153                           | 22,950       | 2                               | 91           | 3   | 420          | 620            | 124,000      | 3,203                             | 1,624               | 4,827         | 4,633               |
| Ark.....           | 354                           | 53,100       | 32                              | 1,700        | 1   | 100          | 575            | 115,000      | 2,781                             | 2,489               | 5,270         | 4,785               |
| La.....            | 157                           | 23,550       | (.123)                          | 7            | 2   | 300          | 420            | 67,200       | 1,959                             | 1,432               | 3,391         | 3,057               |
| Okla.....          | 1,058                         | 201,020      | 374                             | 21,418       | 8   | 800          | 415            | 103,750      | 3,072                             | 8,101               | 11,793        | 9,072               |
| Tex.....           | 851                           | 187,220      | 92                              | 5,258        | 6   | 600          | 1,018          | 264,680      | 7,570                             | 7,776               | 13,346        | 13,683              |
| S. Cent.....       | 3,943                         | 743,745      | 588                             | 33,999       | 30  | 3,145        | 4,948          | 1,126,130    | 32,398                            | 33,827              | 66,225        | 59,693              |
| Mont.....          | 169                           | 32,110       | 7                               | 472          |   |              | 110            | 24,200       | 625                               | 1,381               | 2,006         | 1,940               |
| Idaho.....         | 285                           | 54,150       | 4                               | 292          |   |              | 75             | 17,625       | 561                               | 2,141               | 2,702         | 2,492               |
| Wyo.....           | 43                            | 8,170        | 7                               | 438          | 8   | 800          | 35             | 8,050        | 202                               | 301                 | 603           | 422                 |
| Colo.....          | 509                           | 117,070      | 41                              | 2,658        | 24  | 2,400        | 85             | 21,120       | 579                               | 4,081               | 4,600         | 4,167               |
| N. Mex.....        | 47                            | 9,400        | 2                               | 128          |   |              | 32             | 6,400        | 188                               | 352                 | 565           | 472                 |
| Ariz.....          | 25                            | 5,000        | 6                               | 369          |   |              | 10             | 1,900        | 52                                | 279                 | 331           | 285                 |
| Utah.....          | 45                            | 6,750        | 1                               | 75           | 2   | 200          | 36             | 7,200        | 205                               | 331                 | 536           | 480                 |
| Nev.....           | 7                             | 1,190        | (.089)                          | 7            |   |              | 9              | 1,800        | 64                                | 68                  | 132           | 122                 |
| Wash.....          | 180                           | 37,800       | 4                               | 305          | 12  | 1,200        | 125            | 27,500       | 632                               | 2,147               | 2,779         | 2,545               |
| Oreg.....          | 184                           | 34,960       | 2                               | 147          | 11  | 1,100        | 103            | 21,630       | 517                               | 1,832               | 2,346         | 1,927               |
| Calif.....         | 644                           | 119,490      | 14                              | 1,005        | 4   | 400          | 75             | 15,000       | 454                               | 5,292               | 5,746         | 5,249               |
| West.....          | 2,138                         | 426,090      | 88                              | 5,896        | 61  | 6,100        | 698            | 152,425      | 4,074                             | 18,235              | 22,309        | 20,099              |
| U. S.....          | 58,331                        | 13,184,676   | 6,411                           | 443,490      | 971   | 108,735      | 15,213         | 3,525,630    | 107,214                           | 511,390             | 618,604       | 587,782             |

<sup>1</sup> Purchases under the Agricultural Adjustment Administration.

Bureau of Agricultural Economics; preliminary estimates of Division of Crop and Livestock Estimates. The figures on income as shown in tables 461 and 462 are computed from the data shown in this table. The difference between gross income and value of production arises from the fact that in computing value of production, allowance is made for changes in inventory numbers at the beginning and end of the year, while in computing income these changes are not used.

TABLE 343.—*Hogs: Cholera-control work by Bureau of Animal Industry, 1919-34*

| Year ended June 30 | Bureau veterinarians engaged in work <sup>1</sup> | Premises investigated | Demonstrations |              | Post-mortem examinations | Outbreaks reported to Bureau veterinarians |
|--------------------|---|-----------------------|----------------|--------------|--------------------------|--|
|                    |   |                       | Number         | Hogs treated |                          |  |
| 1919-----          | 180   | 93,512                | -----          | 233,987      | 53,586                   | 12,336                                     |
| 1920-----          | 140   | 46,145                | 3,037          | 347,702      | 10,963                   | 9,788                                      |
| 1921-----          | 54  | 29,433                | 3,420          | 67,295       | 3,888                    | 7,951                                      |
| 1922-----          | 80  | 47,137                | 4,343          | 88,846       | 5,390                    | 7,920                                      |
| 1923-----          | 71  | 52,348                | 5,234          | 108,562      | 5,247                    | 7,204                                      |
| 1924-----          | 45  | 29,443                | 3,178          | 78,007       | 3,686                    | 7,225                                      |
| 1925-----          | 34  | 24,060                | 2,353          | 51,331       | 2,393                    | 3,437                                      |
| 1926-----          | 35  | 20,599                | 2,579          | 69,230       | 2,446                    | 4,558                                      |
| 1927-----          | 37  | 25,004                | 4,863          | 97,917       | 3,741                    | 11,555                                     |
| 1928-----          | 39  | 25,156                | 4,444          | 106,960      | 3,368                    | 6,941                                      |
| 1929-----          | 38  | 23,939                | 2,648          | 56,023       | 3,326                    | 7,029                                      |
| 1930-----          | 37  | 23,858                | 1,740          | 35,158       | 2,505                    | 4,162                                      |
| 1931-----          | 36  | 23,226                | 1,460          | 29,152       | 3,011                    | 3,388                                      |
| 1932-----          | 35  | 24,792                | 2,066          | 36,552       | 3,722                    | 6,490                                      |
| 1933-----          | 32  | 25,887                | 1,829          | 37,522       | 3,226                    | 4,358                                      |
| 1934-----          | 30  | 25,492                | 1,490          | 29,585       | 2,398                    | 4,123                                      |

<sup>1</sup> Small portion of time occasionally devoted to other work.

Bureau of Animal Industry.

TABLE 344.—*Hogs: Slaughter in specified countries, 1925-34*

| Year                    | United States<br>Federally<br>inspected | Canada,<br>total | Germany,<br>inspected<br>slaughter | Denmark,<br>in export<br>slaughter-<br>houses | England and<br>Wales sold<br>off farms for<br>slaughter <sup>1</sup> | Ireland,<br>purchased<br>by bacon<br>curers | Netherlands,<br>slaughter for<br>consumption<br>and export |
|-------------------------|---|------------------|------------------------------------|---|--|---|--|
|                         | <i>Thousands</i>                        | <i>Thousands</i> | <i>Thousands</i>                   | <i>Thousands</i>                              | <i>Thousands</i>   | <i>Thousands</i>                            | <i>Thousands</i>   |
| 1925-----               | 43,043                                  | 5,720            | 12,090                             | 3,766   | 3,832  | 915   | 2,810  |
| 1926-----               | 40,636                                  | 5,636            | 13,072                             | 3,833   | 3,326  | 914   | 2,440  |
| 1927-----               | 43,633                                  | 5,965            | 17,279                             | 5,098   | 3,968  | 1,064                                       | 3,041  |
| 1928-----               | 49,795                                  | 5,880            | 19,480                             | 5,373   | 4,378  | 1,272                                       | 3,077  |
| 1929-----               | 48,445                                  | 5,747            | 17,252                             | 4,994   | 3,481  | 1,146                                       | 2,415  |
| 1930-----               | 44,266                                  | 5,248            | 18,041                             | 6,132   | 3,477  | 1,034                                       | 2,746  |
| 1931-----               | 44,772                                  | 6,187            | 20,520                             | 7,320   | 4,152  | 1,091                                       | 3,660  |
| 1932-----               | 45,245                                  | 6,286            | 19,002                             | 7,841   | 4,681  | 1,115                                       | 3,559  |
| 1933-----               | 47,226                                  | 5,814            | 18,260                             | 6,392   | -----  | 1,221                                       | 2,796  |
| 1934 <sup>2</sup> ----- | 43,586                                  | (3)              | 19,414                             | 4,898   | (4)  | (4)   | -----  |

<sup>1</sup> Years beginning June 1. Revised estimates on basis of returns published in The Agricultural Output of England and Wales 1930-31, published in 1934.<sup>2</sup> Preliminary estimates.<sup>3</sup> Inspected slaughter alone was as follows in thousands: 1933, 2,802; 1934, 2,872.<sup>4</sup> Revised estimate of slaughter in the United Kingdom and Irish Free State for year beginning June 1 was as follows: 1925, 4,919; 1926, 4,576; 1927, 5,825; 1928, 6,457; 1929, 4,983; 1930, 4,957; 1931, 6,023; 1932, 6,432; 1933, 6,035 (see note 1).

Bureau of Agricultural Economics; compiled from official sources and cabled reports from agricultural representatives abroad.

For earlier years see 1931 Yearbook, table 387.



TABLE 345.—*Lard, American: Average price per pound at Liverpool, 1925-34*PRIME WESTERN STEAM <sup>1</sup>

| Year     | Jan.              | Feb.              | Mar.         | Apr.         | May               | June         | July         | Aug.         | Sept.        | Oct.         | Nov.             | Dec.         | Average      |
|----------|-------------------|-------------------|--------------|--------------|-------------------|--------------|--------------|--------------|--------------|--------------|------------------|--------------|--------------|
|          | <i>Cents</i>      | <i>Cents</i>      | <i>Cents</i> | <i>Cents</i> | <i>Cents</i>      | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i>     | <i>Cents</i> | <i>Cents</i> |
| 1925---- | 18.0              | <sup>2</sup> 17.5 | 18.7         | 17.8         | 17.6              | 19.1         | 19.3         | 19.2         | 19.2         | 17.9         | 17.8             | 16.6         | 18.2         |
| 1926---- | 17.2              | 16.5              | 16.5         | 16.0         | <sup>2</sup> 17.6 | 18.4         | 17.8         | 17.0         | 16.6         | 15.8         | 14.2             | 14.3         | 16.5         |
| 1927---- | 14.3              | 14.4              | 14.4         | 14.3         | 14.1              | 14.4         | 14.3         | 13.8         | 14.6         | 14.4         | 14.0             | 13.5         | 14.2         |
| 1928---- | 13.6              | 12.9              | 13.0         | 13.3         | 13.4              | 13.3         | 13.7         | 13.9         | 14.4         | 13.9         | 13.4             | 13.2         | 13.5         |
| 1929---- | 13.4              | 13.5              | 13.9         | 13.5         | 13.4              | 13.5         | 13.9         | 13.8         | 13.5         | 12.7         | 12.1             | 11.8         | 13.2         |
| 1930---- | 11.9              | 12.2              | 11.8         | 11.8         | 11.8              | 11.3         | 11.2         | 12.3         | 13.2         | 13.2         | 12.5             | 11.3         | 12.0         |
| 1931---- | <sup>3</sup> 10.6 | 9.8               | 10.5         | 10.3         | 9.5               | 10.0         | 9.5          | 8.8          | 8.7          | 9.0          | 8.2              | 7.3          | 9.3          |
| 1932---- | 6.7               | 6.5               | 6.7          | 6.3          | 5.8               | 5.6          | 6.9          | 7.0          | 7.0          | 6.1          | <sup>2</sup> 7.6 | 6.4          | 6.6          |
| 1933---- | <sup>3</sup> 6.0  | 5.8               | 6.2          | 6.4          | 8.2               | 8.2          | 8.7          | 7.7          | 7.5          | 7.4          | 7.5              | 6.4          | 7.2          |
| 1934---- | 6.3               | 6.8               | 6.7          | 5.7          | 5.3               | 5.5          | 5.7          | 7.7          | 9.7          | 9.3          | 10.2             | 11.4         | 7.5          |

REFINED <sup>4</sup>

|          |     |     |     |     |     |     |     |     |     |     |      |      |       |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|-------|
| 1931---- |     |     |     |     |     |     | 9.5 | 8.9 | 8.9 | 9.4 | 8.4  | 8.1  | ----- |
| 1932---- | 7.0 | 6.9 | 6.9 | 6.5 | 6.2 | 6.1 | 7.2 | 7.5 | 7.6 | 7.2 | 7.3  | 6.8  | 6.9   |
| 1933---- | 6.7 | 5.9 | 6.3 | 6.5 | 8.2 | 8.2 | 8.8 | 7.8 | 7.6 | 7.5 | 7.6  | 6.7  | 7.3   |
| 1934---- | 6.4 | 7.0 | 7.0 | 6.0 | 5.5 | 5.7 | 5.8 | 7.6 | 9.5 | 9.2 | 10.4 | 11.2 | 7.6   |

<sup>1</sup> Average price in tierces.<sup>2</sup> 2 quotations only.<sup>3</sup> 1 quotation only.<sup>4</sup> Average price in boxes.

Bureau of Agricultural Economics. Compiled as follows: Prime western steam, Manchester Guardian, averages of Friday quotations; refined, monthly reports of H. E. Reed, foreign agricultural representative, London, average of daily quotations.

Converted at monthly average rates of exchange as given in Federal Reserve Bulletin, except for period January 1926-August 1931, when par of exchange was used.

TABLE 346.—*Lard, refined: Average price per 100 pounds at Chicago, by months, 1925-34*

| Year     | Jan.        | Feb.        | Mar.        | Apr.        | May         | June        | July        | Aug.        | Sept.       | Oct.        | Nov.        | Dec.        | Average     |
|----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|          | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> |
| 1925---- | 17.59       | 17.03       | 18.25       | 17.07       | 16.50       | 18.13       | 18.42       | 18.94       | 18.95       | 18.75       | 18.50       | 18.67       | 17.90       |
| 1926---- | 16.81       | 16.44       | 16.70       | 16.75       | 17.13       | 18.48       | 18.00       | 17.38       | 17.50       | 16.75       | 15.75       | 15.25       | 16.91       |
| 1927---- | 13.59       | 13.72       | 14.38       | 14.32       | 14.12       | 13.35       | 12.25       | 12.54       | 14.25       | 14.50       | 13.60       | 13.25       | 13.66       |
| 1928---- | 12.50       | 11.60       | 11.50       | 12.50       | 13.10       | 13.50       | 14.00       | 14.70       | 15.25       | 14.40       | 13.62       | 12.88       | 13.30       |
| 1929---- | 12.75       | 12.75       | 13.31       | 13.25       | 12.85       | 12.85       | 13.22       | 13.56       | 13.81       | 13.17       | 12.21       | 11.94       | 12.97       |
| 1930---- | 11.45       | 12.38       | 12.12       | 11.65       | 11.50       | 11.00       | 10.50       | 12.44       | 14.25       | 13.94       | 12.31       | 10.70       | 12.02       |
| 1931---- | 9.62        | 8.94        | 10.00       | 10.00       | 9.50        | 9.33        | 8.65        | 8.32        | 9.00        | 8.58        | 8.47        | 7.65        | 9.02        |
| 1932---- | 6.50        | 6.53        | 6.70        | 6.00        | 5.50        | 5.33        | 6.96        | 7.00        | 6.75        | 6.25        | 6.19        | 5.28        | 6.25        |
| 1933---- | 5.69        | 5.00        | 5.50        | 6.09        | 7.23        | 7.01        | 7.53        | 6.65        | 6.31        | 6.73        | 6.98        | 6.25        | 6.42        |
| 1934---- | 6.32        | 7.12        | 7.88        | 7.50        | 7.00        | 7.31        | 7.56        | 9.53        | 11.25       | 10.88       | 11.75       | 11.97       | 8.84        |

Bureau of Agricultural Economics. Compiled from data of the livestock and meat reporting service of the Bureau. Beginning January 1927 prices represent refined lard in hardwood tubs, earlier prices represent pure lard in tierces. Prices 1905 to December 1924 available in 1927 Yearbook, table 373.

TABLE 347.—*Pork and lard:*<sup>1</sup> *Stocks in cold-storage warehouses and meat-packing establishments, United States, 1925-34*

| Product and year   | Jan. 1    | Feb. 1    | Mar. 1    | Apr. 1    | May 1     | June 1    | July 1    | Aug. 1    | Sept. 1   | Oct. 1    | Nov. 1    | Dec. 1    |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Dry salt pork, cured and in process of cure:             | 1,000 lb. | 1,000 lb. | 1,000 lb. | 1,000 lb. | 1,000 lb. | 1,000 lb. | 1,000 lb. | 1,000 lb. | 1,000 lb. | 1,000 lb. | 1,000 lb. | 1,000 lb. |
| 1925   | 118,718   | 136,125   | 150,819   | 142,950   | 145,548   | 142,292   | 162,518   | 164,374   | 152,555   | 128,599   | 106,011   | 96,746    |
| 1926   | 119,617   | 188,005   | 144,071   | 151,286   | 140,324   | 136,801   | 148,164   | 168,882   | 172,766   | 143,572   | 98,521    | 66,765    |
| 1927   | 68,203    | 86,135    | 101,156   | 124,076   | 129,637   | 143,173   | 256,185   | 920,178   | 107,140   | 420,100   | 922,77    | 240       |
| 1928   | 97,335    | 119,751   | 160,609   | 178,012   | 173,652   | 189,663   | 174,906   | 164,473   | 156,462   | 125,899   | 101,123   | 102,440   |
| 1929   | 143,011   | 167,561   | 179,776   | 178,595   | 185,580   | 171,450   | 163,805   | 172,308   | 160,519   | 139,256   | 111,092   | 88,782    |
| 1930   | 107,782   | 116,288   | 123,740   | 115,653   | 110,303   | 105,913   | 108,171   | 114,095   | 97,237    | 71,143    | 43,194    | 48,931    |
| 1931   | 70,188    | 108,394   | 129,278   | 141,225   | 147,995   | 148,682   | 154,949   | 168,505   | 153,507   | 116,180   | 79,453    | 63,121    |
| 1932   | 87,188    | 103,827   | 122,902   | 124,242   | 127,146   | 128,423   | 118,092   | 111,210   | 108,779   | 91,355    | 65,337    | 50,874    |
| 1933   | 69,263    | 81,885    | 86,848    | 87,039    | 89,216    | 105,646   | 131,256   | 146,303   | 144,888   | 126,377   | 92,779    | 81,703    |
| 1934 <sup>2</sup>  | 97,301    | 110,674   | 112,582   | 108,538   | 107,620   | 98,450    | 91,064    | 91,617    | 63,782    | 58,763    | 50,682    | 52,906    |
| Pickled <sup>3</sup> pork, cured and in process of cure: |           |           |           |           |           |           |           |           |           |           |           |           |
| 1925   | 398,521   | 443,025   | 483,302   | 468,099   | 467,395   | 425,481   | 407,610   | 370,373   | 227,338   | 156,284   | 485,256   | 684,261   |
| 1926   | 294,642   | 819,726   | 345,661   | 846,049   | 833,905   | 820,305   | 833,805   | 840,687   | 830,326   | 293,108   | 257,726   | 266,222   |
| 1927   | 306,904   | 352,681   | 392,642   | 420,037   | 435,967   | 432,965   | 450,172   | 440,744   | 407,239   | 341,460   | 289,553   | 276,916   |
| 1928   | 320,436   | 370,916   | 461,204   | 496,322   | 480,069   | 459,878   | 454,826   | 408,994   | 351,936   | 285,309   | 265,988   | 292,626   |
| 1929   | 375,217   | 424,921   | 473,916   | 453,612   | 452,868   | 443,044   | 430,317   | 412,649   | 382,750   | 342,038   | 304,400   | 316,180   |
| 1930   | 368,126   | 392,123   | 443,882   | 430,925   | 411,705   | 392,403   | 396,810   | 380,182   | 329,074   | 283,979   | 249,485   | 285,686   |
| 1931   | 328,010   | 402,448   | 453,042   | 431,926   | 453,038   | 434,324   | 403,908   | 362,423   | 311,985   | 277,148   | 247,986   | 264,205   |
| 1932   | 334,360   | 383,273   | 445,346   | 419,687   | 430,772   | 442,222   | 411,208   | 372,787   | 349,559   | 328,309   | 308,032   | 291,177   |
| 1933   | 319,794   | 350,114   | 368,592   | 370,169   | 375,257   | 389,102   | 416,740   | 433,842   | 416,891   | 375,563   | 324,760   | 365,766   |
| 1934 <sup>2</sup>  | 402,632   | 442,438   | 437,044   | 381,248   | 352,616   | 376,768   | 369,392   | 370,695   | 326,379   | 335,212   | 330,378   | 360,332   |
| Frozen pork:   |           |           |           |           |           |           |           |           |           |           |           |           |
| 1925   | 130,125   | 199,642   | 231,234   | 218,508   | 201,246   | 180,645   | 168,527   | 131,935   | 93,078    | 54,294    | 29,910    | 27,153    |
| 1926   | 57,960    | 98,311    | 120,115   | 129,259   | 124,569   | 117,866   | 120,707   | 133,104   | 119,994   | 77,673    | 49,376    | 55,241    |
| 1927   | 97,650    | 150,255   | 177,876   | 193,733   | 204,608   | 211,742   | 220,847   | 214,607   | 181,072   | 126,887   | 76,644    | 65,696    |
| 1928   | 105,654   | 164,971   | 264,043   | 323,403   | 306,951   | 289,825   | 285,628   | 245,714   | 173,617   | 103,879   | 66,049    | 66,696    |
| 1929   | 151,811   | 245,798   | 291,050   | 289,754   | 285,110   | 256,291   | 247,815   | 229,397   | 176,131   | 119,204   | 75,910    | 84,687    |
| 1930   | 145,078   | 178,695   | 217,942   | 206,417   | 189,692   | 176,851   | 174,240   | 157,167   | 124,648   | 92,305    | 64,127    | 77,137    |
| 1931   | 122,994   | 215,422   | 271,088   | 270,520   | 266,491   | 244,745   | 215,794   | 180,863   | 129,571   | 81,559    | 53,456    | 69,237    |
| 1932   | 141,758   | 187,051   | 244,151   | 248,268   | 241,146   | 225,221   | 194,971   | 159,055   | 120,638   | 78,589    | 60,179    | 61,847    |
| 1933   | 101,793   | 143,085   | 153,881   | 153,032   | 165,857   | 175,805   | 212,734   | 228,177   | 194,922   | 128,497   | 75,769    | 81,985    |
| 1934 <sup>2</sup>  | 129,763   | 177,292   | 184,330   | 167,436   | 165,851   | 168,350   | 167,989   | 181,254   | 151,849   | 130,245   | 122,677   | 158,675   |
| Lard: <sup>1</sup>                                       |           |           |           |           |           |           |           |           |           |           |           |           |
| 1925   | 61,049    | 112,704   | 151,927   | 150,182   | 151,499   | 138,295   | 145,919   | 145,924   | 114,724   | 71,628    | 37,256    | 33,710    |
| 1926   | 42,478    | 64,187    | 76,145    | 93,108    | 98,365    | 106,824   | 120,527   | 153,572   | 151,233   | 105,558   | 72,555    | 46,744    |
| 1927   | 49,992    | 69,576    | 77,103    | 92,069    | 99,611    | 111,976   | 147,318   | 179,136   | 167,018   | 118,174   | 72,121    | 46,164    |
| 1928   | 54,855    | 84,007    | 121,082   | 164,508   | 173,088   | 186,073   | 214,479   | 204,939   | 177,888   | 126,890   | 83,474    | 67,257    |
| 1929   | 85,217    | 140,526   | 173,864   | 179,428   | 184,743   | 183,490   | 199,699   | 203,010   | 180,085   | 153,690   | 99,845    | 68,517    |
| 1930   | 82,098    | 92,171    | 111,914   | 105,067   | 104,905   | 115,270   | 120,322   | 118,353   | 88,868    | 59,732    | 36,211    | 31,582    |
| 1931   | 51,434    | 62,624    | 74,977    | 78,249    | 95,693    | 103,866   | 115,561   | 121,926   | 96,047    | 69,296    | 39,766    | 34,824    |
| 1932   | 51,224    | 78,430    | 92,805    | 635,111   | 007,128   | 103,130   | 363,770   | 618,100   | 677,70    | 656       | 34,410    | 29,766    |
| 1933   | 41,088    | 52,841    | 58,182    | 61,674    | 71,895    | 110,889   | 186,250   | 219,259   | 224,476   | 192,061   | 133,693   | 116,077   |
| 1934   | 132,510   | 168,756   | 176,044   | 173,775   | 179,098   | 182,240   | 195,135   | 209,497   | 167,155   | 128,054   | 105,519   | 103,827   |

<sup>1</sup> Lard includes all prime steam, kettle-rendered, neutral, and other pure lards. It does not include lard substitutes nor compounds.

<sup>2</sup> Stocks of meat purchased under the emergency hog-control program by Federal Surplus Relief Corporation are not included in these figures for year 1934.

<sup>3</sup> Pickled pork includes sweet-pickled, plain-brine, and barreled pork.

Bureau of Agricultural Economics. Compiled from reports made by cold-storage establishments. Data for earlier years in 1928 Yearbook, table 390.

TABLE 348.—*Hogs and hog products: International trade, average 1925-29, annual 1931-33*

| Country                       | Calendar year    |              |              |              |                    |                    |                   |              |
|-------------------------------|------------------|--------------|--------------|--------------|--------------------|--------------------|-------------------|--------------|
|                               | Average 1925-29  |              | 1931         |              | 1932               |                    | 1933 <sup>1</sup> |              |
|                               | Exports          | Imports      | Exports      | Imports      | Exports            | Imports            | Exports           | Imports      |
| PRINCIPAL EXPORTING COUNTRIES | 1,000 pounds     | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 pounds       | 1,000 pounds       | 1,000 pounds      | 1,000 pounds |
| United States.....            | 1,136,856        | 10,459       | 750,822      | 3,976        | 679,229            | 5,774              | 738,156           | 2,926        |
| Denmark.....                  | 557,264          | 2,869        | 897,658      | 2,249        | 923,307            | 1,166              | 698,653           | 860          |
| Netherlands.....              | 249,396          | 15,089       | 285,673      | 4,833        | 257,759            | 3,134              | 193,699           | 1,872        |
| Irish Free State.....         | 92,656           | 55,011       | 84,901       | 56,056       | 61,271             | 21,664             | 57,838            | 314          |
| Canada.....                   | 90,757           | 17,247       | 22,269       | 5,818        | 50,947             | 3,671              | 82,235            | 5,390        |
| Poland.....                   | 48,082           | 37,238       | 161,306      | 621          | 138,357            | 41                 | 101,229           | 24           |
| Sweden.....                   | 41,205           | 9,796        | 67,870       | 4,640        | 49,750             | 3,523              | 47,593            | 4,844        |
| Hungary.....                  | 20,512           | 84           | 12,049       | 0            | 8,116              | 0                  | 15,886            | 0            |
| New Zealand.....              | 13,177           | 35           | 13,612       | 0            | 16,338             | 1                  | 86,401            | 0            |
| China.....                    | 12,824           | 413          | 9,807        | 255          | <sup>2</sup> 6,437 | <sup>2</sup> 2,023 | 8,217             | 1,510        |
| Argentina.....                | 9,319            | 42           | 14,116       | 16           | 24,351             | 9                  | 35,336            | 8            |
| Estonia.....                  | 3,826            | 289          | 6,906        | 0            | 9,056              | 0                  | 8,750             | 0            |
| Australia <sup>3</sup> .....  | 3,374            | 2,119        | 11,768       | 173          | 11,737             | 17                 | 9,921             | 32           |
| Total.....                    | 2,285,198        | 150,601      | 2,338,657    | 78,487       | 2,236,653          | 41,023             | 2,032,514         | 17,783       |
| PRINCIPAL IMPORTING COUNTRIES |                  |              |              |              |                    |                    |                   |              |
| United Kingdom.....           | 5,883            | 1,371,607    | 6,110        | 1,702,810    | 5,681              | 1,720,098          | 2,284             | 1,540,469    |
| Germany.....                  | 4,584            | 322,127      | 11,655       | 266,135      | 1,369              | 325,259            | 994               | 228,962      |
| Cuba.....                     | 0                | 130,313      | 0            | 64,066       | 0                  | 34,868             | 0                 | -----        |
| France.....                   | 3,135            | 85,097       | 1,100        | 71,982       | 824                | 30,027             | 827               | 35,760       |
| Czechoslovakia.....           | 4,018            | 81,017       | 2,074        | 63,341       | 716                | 48,252             | 360               | 35,928       |
| Mexico.....                   | 12               | 58,269       | 1            | 47,615       | 0                  | 38,443             | 12                | 36,983       |
| Austria.....                  | 673              | 33,382       | 2,125        | 43,111       | 11                 | 19,836             | 1                 | 12,851       |
| Belgium.....                  | 7,184            | 22,099       | 2,602        | 47,399       | 1,426              | 39,362             | 2,764             | 33,663       |
| Italy.....                    | 3,212            | 16,850       | 2,679        | 3,447        | 1,932              | 15,568             | 2,309             | 11,772       |
| Finland.....                  | 379              | 12,024       | 3,753        | 4,731        | 4,470              | 4,681              | 5,934             | 6,907        |
| Peru.....                     | 6                | 11,692       | 0            | 2,445        | 0                  | 2,084              | 1                 | -----        |
| Norway.....                   | 17               | 8,285        | 47           | 2,028        | 35                 | 3,352              | 3,059             | 2,965        |
| Philippine Islands.....       | 0                | 7,015        | 0            | 8,334        | 0                  | 8,619              | 0                 | -----        |
| Switzerland.....              | 188              | 6,765        | 17           | 5,366        | 256                | 1,959              | 154               | 3,103        |
| Brazil.....                   | 940              | 2,569        | 886          | 405          | 271                | 387                | 21,267            | 181          |
| Spain.....                    | 1,803            | 2,484        | 4,023        | 273          | 3,083              | 257                | 2,448             | 651          |
| Union of South Africa.....    | 747              | 1,398        | 774          | 1,049        | 355                | 664                | 205               | 959          |
| Chile.....                    | <sup>4</sup> 199 | 473          | 200          | 198          | 239                | 1                  | 78                | -----        |
| Total.....                    | 32,980           | 2,176,466    | 38,046       | 2,334,735    | 20,668             | 2,293,717          | 42,697            | 1,951,154    |

<sup>1</sup> Preliminary.<sup>2</sup> Does not include Manchuria after June 30, 1932.<sup>3</sup> Year ended June 30.<sup>4</sup> 4-year average.

Bureau of Agricultural Economics; official sources.

These figures comprise: Pork, fresh, canned, pickled, smoked, bacon, Cumberland sides, Wiltshire sides, hams and shoulders, lard, lard compound, neutral lard, hog casings, lard oil, heads and feet.

TABLE 349.—*Bacon and hams, green, firsts: Average price per pound at British markets, 1925-34*

| Year      | Bacon, Wiltshire sides <sup>1</sup> at Bristol |              |              | Bacon,<br>American<br>bellies, at<br>Liverpool | Ham,<br>American<br>short cut, at<br>Liverpool |
|-----------|--|--------------|--------------|--|--|
|           | Danish   | Swedish      | British      |  |  |
|           | <i>Cents</i>                                   | <i>Cents</i> | <i>Cents</i> | <i>Cents</i>                                   | <i>Cents</i>                                   |
| 1925..... | 27.5   | 25.6         | 30.1         | 25.9   | 26.1   |
| 1926..... | 27.9   | 26.2         | 32.3         | 23.8   | 28.8   |
| 1927..... | 21.2   | 19.3         | 26.9         | 20.0   | 22.9   |
| 1928..... | 21.2   | 19.9         | 25.8         | 18.4   | 22.1   |
| 1929..... | 24.5   | 23.8         | 28.3         | 19.5   | 23.8   |
| 1930..... | 20.6   | 19.9         | 27.4         | <sup>2</sup> 18.7                              | 21.9   |
| 1931..... | 13.2   | 12.2         | 19.6         | 12.6   | 16.6   |
| 1932..... | 9.2  | 8.8          | 13.5         | <sup>3</sup> 8.8                               | 11.6   |
| 1933..... | 13.6   | 14.4         | 17.2         | <sup>4</sup> 11.0                              | 13.9   |
| 1934..... | 20.8   | 20.0         | 21.8         | <sup>4</sup> 16.6                              | 20.5   |

<sup>1</sup> Entire half of hog in 1 piece, head off, backbone out, ribs in. <sup>2</sup> 11 months. <sup>3</sup> 10 months. <sup>4</sup> 6 months.

Bureau of Agricultural Economics. Compiled from Agricultural Market Report, Ministry of Agriculture and Fisheries, Great Britain; average of weekly averages.

Converted at monthly average rates of exchange as given in Federal Reserve Bulletins, except for period January 1926-August 1931, when par of exchange was used.

TABLE 350.—*Lard: International trade, average 1925-29, annual 1930-33*

| Country                                    | Calendar year           |                         |                         |                         |                         |                         |                         |                         |                         |                         |
|--|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|  | Average 1925-29         |                         | 1930                    |                         | 1931                    |                         | 1932                    |                         | 1933 <sup>1</sup>       |                         |
|  | Exports                 | Imports                 | Exports                 | Imports                 | Exports                 | Imports                 | Exports                 | Imports                 | Exports                 | Imports                 |
| <b>PRINCIPAL EXPORT-<br/>ING COUNTRIES</b> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> |
| United States.....                         | 731,629                 | 0                       | 642,486                 | 0                       | 568,708                 | 0                       | 546,202                 | 0                       | 579,132                 | 0                       |
| Netherlands.....                           | 64,693                  | 6,748                   | 39,619                  | 2,831                   | 60,350                  | 2,769                   | 37,099                  | 2,331                   | 25,320                  | 1,739                   |
| Denmark.....                               | 25,984                  | 1,383                   | 38,102                  | 1,377                   | 50,613                  | 912                     | 53,305                  | 304                     | 43,005                  | 181                     |
| China.....                                 | 10,672                  | 0                       | 8,458                   | 0                       | 8,074                   | 0                       | 4,756                   | 266                     | 3,254                   | 8                       |
| Hungary.....                               | 9,618                   | 15                      | 9,183                   | 0                       | 6,636                   | 0                       | 4,073                   | 0                       | 4,404                   | 0                       |
| Canada.....                                | 4,020                   | 1,462                   | 175                     | 1,656                   | 4,730                   | 48                      | 4,886                   | 1,040                   | 2,932                   | 1,563                   |
| Irish Free State.....                      | 3,852                   | 699                     | 3,210                   | 1,016                   | 3,262                   | 824                     | 3,093                   | 467                     | 5,846                   | 160                     |
| Madagascar.....                            | 1,998                   | 2                       | 1,514                   | 0                       | 1,659                   | 0                       | 2,417                   | 1                       | 2,430                   | 0                       |
| Australia <sup>2</sup> .....               | 1,550                   | 413                     | 970                     | 206                     | 1,044                   | 101                     | 2,924                   | 15                      | 1,621                   | 25                      |
| <b>Total.....</b>                          | <b>853,986</b>          | <b>10,722</b>           | <b>743,717</b>          | <b>7,086</b>            | <b>705,106</b>          | <b>4,654</b>            | <b>658,755</b>          | <b>4,224</b>            | <b>667,944</b>          | <b>3,676</b>            |
| <b>PRINCIPAL IMPORT-<br/>ING COUNTRIES</b> |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |
| United Kingdom.....                        | 912                     | 267,191                 | 739                     | 279,444                 | 645                     | 284,505                 | 385                     | 273,027                 | 356                     | 321,852                 |
| Germany.....                               | 857                     | 216,643                 | 4267                    | 177,180                 | 4228                    | 183,454                 | 457                     | 237,490                 | 47                      | 163,460                 |
| Cuba.....                                  | 0                       | 87,352                  | 0                       | 69,035                  | 0                       | 45,178                  | 0                       | 21,818                  | 0                       | 0                       |
| Czechoslovakia.....                        | 52                      | 06,159                  | 7                       | 52,630                  | 3                       | 45,401                  | 1                       | 41,568                  | 0                       | 28,564                  |
| Mexico.....                                | 12                      | 55,972                  | 6                       | 77,390                  | 1                       | 47,615                  | 0                       | 37,833                  | 12                      | 36,343                  |
| Austria.....                               | 672                     | 33,151                  | 35                      | 22,334                  | 1,970                   | 18,493                  | 8                       | 11,339                  | 0                       | 6,669                   |
| France.....                                | 500                     | 32,856                  | 493                     | 17,414                  | 304                     | 4,568                   | 164                     | 2,830                   | 193                     | 8,742                   |
| Poland.....                                | 47                      | 30,326                  | 22                      | 26,549                  | 139                     | 577                     | 29                      | 1                       | 29                      | 0                       |
| Belgium.....                               | 2,205                   | 16,257                  | 1,947                   | 14,199                  | 1,298                   | 8,980                   | 836                     | 12,249                  | 2,435                   | 20,681                  |
| Peru.....                                  | 6                       | 11,692                  | 0                       | 4,966                   | 0                       | 2,445                   | 0                       | 2,084                   | 1                       | 0                       |
| Italy.....                                 | 820                     | 7,523                   | 258                     | 5,324                   | 211                     | 2,793                   | 38                      | 5,769                   | 30                      | 6,654                   |
| Finland.....                               | 54                      | 6,758                   | 0                       | 5,277                   | 0                       | 3,302                   | 1                       | 3,838                   | 0                       | 4,916                   |
| Switzerland.....                           | 21                      | 6,031                   | 10                      | 3,908                   | 14                      | 3,345                   | 25                      | 1,886                   | 2                       | 3,098                   |
| Dominican Republic.....                    | 0                       | 4,883                   | 0                       | 4,058                   | 0                       | 4,549                   | 0                       | 4,418                   | 0                       | 4,903                   |
| Philippine Islands.....                    | 0                       | 4,799                   | 0                       | 4,706                   | 0                       | 5,909                   | 0                       | 5,740                   | 0                       | 0                       |
| British Malaya.....                        | 1,151                   | 3,832                   | 815                     | 2,399                   | 426                     | 1,978                   | 379                     | 1,185                   | 394                     | 1,449                   |
| Sweden.....                                | 1,327                   | 2,843                   | 2,560                   | 1,602                   | 3,512                   | 1,894                   | 2,553                   | 1,329                   | 2,284                   | 1,291                   |
| Brazil.....                                | 231                     | 2,312                   | 986                     | 654                     | 653                     | 310                     | 44                      | 329                     | 19,302                  | 108                     |
| Norway.....                                | 1                       | 1,945                   | 0                       | 1,177                   | 0                       | 1,114                   | 1                       | 487                     | 8                       | 536                     |
| Yugoslavia.....                            | 936                     | 1,501                   | 262                     | 201                     | 1,748                   | 16                      | 2,161                   | 0                       | 2,064                   | 0                       |
| <b>Total.....</b>                          | <b>9,804</b>            | <b>859,026</b>          | <b>8,405</b>            | <b>770,447</b>          | <b>11,352</b>           | <b>606,416</b>          | <b>6,682</b>            | <b>665,190</b>          | <b>27,117</b>           | <b>610,266</b>          |

<sup>1</sup> Preliminary.<sup>2</sup> Does not include Manchuria after June 30, 1932.<sup>3</sup> Year ended June 30.<sup>4</sup> Includes oleomargarine.

Bureau of Agricultural Economics; official sources.

TABLE 351.—*Sheep and lambs: Number on farms and farm value per head in the United States, Jan. 1, 1900-1935*

| Year                    | Num-<br>ber <sup>1</sup> | Farm<br>value<br>per<br>head<br>Jan. 1 | Year                    | Num-<br>ber <sup>1</sup> | Farm<br>value<br>per<br>head<br>Jan. 1 | Year                    | Num-<br>ber <sup>1</sup> | Farm<br>value<br>per<br>head<br>Jan. 1 |
|-------------------------|--------------------------|--|-------------------------|--------------------------|--|-------------------------|--------------------------|--|
|                         | <i>Thou-<br/>sands</i>   | <i>Dollars</i>                         |                         | <i>Thou-<br/>sands</i>   | <i>Dollars</i>                         |                         | <i>Thou-<br/>sands</i>   | <i>Dollars</i>                         |
| 1900 <sup>2</sup> ..... | 61,504                   |  | 1912.....               | 43,279                   | 3.46                                   | 1925 <sup>2</sup> ..... | 35,590                   |  |
| 1900.....               | 44,573                   | 2.93                                   | 1913.....               | 40,700                   | 3.94                                   | 1925.....               | 38,392                   |  |
| 1901.....               | 46,155                   | 2.98                                   | 1914.....               | 37,773                   | 4.02                                   | 1926.....               | 40,183                   | 9.68                                   |
| 1902.....               | 46,667                   | 2.65                                   | 1915.....               | 36,287                   | 4.50                                   | 1927.....               | 42,302                   | 10.48                                  |
| 1903.....               | 45,180                   | 2.63                                   | 1916.....               | 36,543                   | 5.17                                   | 1928.....               | 45,121                   | 9.67                                   |
| 1904.....               | 42,439                   | 2.59                                   | 1917.....               | 36,700                   | 7.13                                   | 1929.....               | 48,249                   | 10.22                                  |
| 1905.....               | 40,263                   | 2.82                                   | 1918.....               | 39,000                   | 11.82                                  | 1930 <sup>3</sup> ..... | 56,975                   | 10.59                                  |
| 1906.....               | 42,454                   | 3.54                                   | 1919.....               | 41,000                   | 11.63                                  | 1930.....               | 51,233                   |  |
| 1907.....               | 44,518                   | 3.84                                   | 1920 <sup>3</sup> ..... | 35,034                   |  | 1931.....               | 52,599                   | 8.94                                   |
| 1908.....               | 46,557                   | 3.88                                   | 1920.....               | 40,643                   | 10.45                                  | 1932.....               | 53,155                   | 5.36                                   |
| 1909.....               | 48,382                   | 3.43                                   | 1921.....               | 39,378                   | 6.27                                   | 1933.....               | 51,782                   | 3.40                                   |
| 1910 <sup>3</sup> ..... | 52,448                   |  | 1922.....               | 36,821                   | 4.79                                   | 1934.....               | 52,212                   | 2.90                                   |
| 1910.....               | 47,072                   | 4.12                                   | 1923.....               | 36,695                   | 7.49                                   | 1935 <sup>3</sup> ..... | 49,766                   | 3.79                                   |
| 1911.....               | 47,349                   | 3.91                                   | 1924.....               | 37,020                   | 7.88                                   |                         |                          | 4.31                                   |

<sup>1</sup> Figures for 1900-1919 are tentative revised estimates of the Bureau of Agricultural Economics.<sup>2</sup> Italic figures are from the census. Census dates were June 1, 1900, Apr. 15, 1910, Jan. 1, 1920, and 1926, and Apr. 1, 1930. 1900, 1910, and 1930 include spring-born lambs.<sup>3</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 352.—*Sheep and lambs: Number on farms and farm value per head, by States, Jan. 1, 1932–35*

| State and division      | Number         |                |                |                   | Farm value per head <sup>1</sup> |         |         |         |
|-------------------------|----------------|----------------|----------------|-------------------|----------------------------------|---------|---------|---------|
|                         | 1932           | 1933           | 1934           | 1935 <sup>2</sup> | 1932                             | 1933    | 1934    | 1935    |
|                         | Thou-<br>sands | Thou-<br>sands | Thou-<br>sands | Thou-<br>sands    | Dollars                          | Dollars | Dollars | Dollars |
| Maine.....              | 79             | 70             | 65             | 55                | 3.50                             | 3.00    | 3.30    | 3.50    |
| New Hampshire.....      | 18             | 16             | 15             | 14                | 4.50                             | 3.70    | 4.10    | 4.40    |
| Vermont.....            | 39             | 36             | 34             | 32                | 3.90                             | 3.50    | 3.90    | 4.20    |
| Massachusetts.....      | 11             | 11             | 10             | 10                | 4.50                             | 3.60    | 4.10    | 4.50    |
| Rhode Island.....       | 2              | 2              | 2              | 2                 | 4.50                             | 4.00    | 4.50    | 4.50    |
| Connecticut.....        | 10             | 10             | 9              | 8                 | 4.70                             | 4.30    | 4.50    | 5.10    |
| New York.....           | 473            | 454            | 454            | 459               | 4.40                             | 3.60    | 4.40    | 4.60    |
| New Jersey.....         | 7              | 7              | 7              | 7                 | 5.40                             | 3.60    | 4.30    | 4.90    |
| Pennsylvania.....       | 491            | 501            | 526            | 523               | 4.40                             | 3.00    | 3.30    | 3.90    |
| North Atlantic.....     | 1,130          | 1,107          | 1,122          | 1,113             | 4.35                             | 3.30    | 3.79    | 4.23    |
| Ohio.....               | 2,129          | 2,079          | 2,140          | 2,162             | 3.50                             | 2.80    | 3.50    | 4.20    |
| Indiana.....            | 840            | 785            | 773            | 805               | 4.00                             | 3.30    | 4.10    | 5.40    |
| Illinois.....           | 749            | 736            | 698            | 773               | 3.80                             | 3.20    | 4.00    | 5.10    |
| Michigan.....           | 1,243          | 1,230          | 1,161          | 1,103             | 3.90                             | 3.10    | 4.00    | 4.60    |
| Wisconsin.....          | 540            | 464            | 452            | 466               | 3.20                             | 2.50    | 3.40    | 4.20    |
| East North Central..... | 5,506          | 5,204          | 5,224          | 5,309             | 3.67                             | 2.97    | 3.75    | 4.59    |
| Minnesota.....          | 1,132          | 1,137          | 1,188          | 1,179             | 3.20                             | 2.80    | 3.80    | 4.20    |
| Iowa.....               | 1,428          | 1,238          | 1,331          | 1,504             | 3.80                             | 2.90    | 4.30    | 4.70    |
| Missouri.....           | 1,225          | 1,200          | 1,189          | 1,247             | 3.30                             | 2.70    | 3.80    | 4.40    |
| North Dakota.....       | 1,100          | 1,046          | 951            | 744               | 3.80                             | 2.70    | 3.70    | 3.70    |
| South Dakota.....       | 1,375          | 1,441          | 1,524          | 1,290             | 3.80                             | 2.90    | 3.80    | 3.90    |
| Nebraska.....           | 1,036          | 1,057          | 997            | 740               | 3.00                             | 2.80    | 4.20    | 4.30    |
| Kansas.....             | 777            | 682            | 602            | 722               | 3.10                             | 2.70    | 3.90    | 4.20    |
| West North Central..... | 8,073          | 7,801          | 7,872          | 7,426             | 3.23                             | 2.78    | 3.94    | 4.24    |
| North Central.....      | 13,579         | 13,095         | 13,096         | 12,735            | 3.41                             | 2.86    | 3.86    | 4.38    |
| Delaware.....           | 4              | 4              | 3              | 3                 | 5.00                             | 3.80    | 4.70    | 4.70    |
| Maryland.....           | 103            | 103            | 109            | 109               | 5.10                             | 3.80    | 4.50    | 4.60    |
| Virginia.....           | 495            | 490            | 470            | 442               | 4.60                             | 3.50    | 4.30    | 4.40    |
| West Virginia.....      | 631            | 631            | 600            | 552               | 4.40                             | 3.30    | 3.70    | 4.00    |
| North Carolina.....     | 91             | 92             | 88             | 88                | 3.90                             | 3.10    | 3.40    | 3.70    |
| South Carolina.....     | 14             | 14             | 15             | 15                | 3.60                             | 3.10    | 3.10    | 3.10    |
| Georgia.....            | 36             | 36             | 36             | 36                | 2.30                             | 2.20    | 2.40    | 2.60    |
| Florida.....            | 43             | 44             | 43             | 42                | 2.40                             | 2.30    | 2.40    | 2.60    |
| South Atlantic.....     | 1,422          | 1,409          | 1,364          | 1,287             | 4.35                             | 3.22    | 3.86    | 4.08    |
| Kentucky.....           | 897            | 906            | 951            | 999               | 4.70                             | 3.90    | 4.50    | 4.90    |
| Tennessee.....          | 393            | 405            | 389            | 405               | 4.00                             | 3.20    | 4.00    | 4.60    |
| Alabama.....            | 50             | 52             | 47             | 47                | 2.60                             | 2.00    | 2.30    | 2.90    |
| Mississippi.....        | 100            | 100            | 95             | 81                | 2.00                             | 1.80    | 2.30    | 2.60    |
| Arkansas.....           | 59             | 61             | 58             | 58                | 2.60                             | 2.00    | 2.20    | 2.60    |
| Louisiana.....          | 140            | 143            | 137            | 137               | 2.70                             | 2.00    | 2.20    | 2.70    |
| Oklahoma.....           | 185            | 183            | 183            | 354               | 3.00                             | 2.70    | 3.20    | 3.40    |
| Texas.....              | 7,212          | 7,644          | 8,179          | 7,132             | 2.90                             | 2.50    | 2.90    | 3.40    |
| South Central.....      | 9,036          | 9,499          | 10,039         | 9,238             | 3.12                             | 2.61    | 3.00    | 3.62    |
| Montana.....            | 3,820          | 4,087          | 4,220          | 3,755             | 3.20                             | 3.00    | 4.10    | 4.60    |
| Idaho.....              | 2,274          | 2,284          | 2,461          | 2,335             | 3.60                             | 3.20    | 4.10    | 4.70    |
| Wyoming.....            | 3,972          | 3,893          | 3,873          | 3,579             | 3.60                             | 3.20    | 4.10    | 4.60    |
| Colorado.....           | 3,391          | 3,093          | 3,023          | 2,736             | 3.10                             | 2.90    | 4.20    | 4.50    |
| New Mexico.....         | 3,002          | 2,820          | 2,757          | 2,490             | 2.30                             | 2.30    | 3.30    | 3.80    |
| Arizona.....            | 1,090          | 1,003          | 961            | 942               | 2.40                             | 2.30    | 3.40    | 3.90    |
| Utah.....               | 2,765          | 2,360          | 2,242          | 2,168             | 3.70                             | 3.00    | 3.90    | 4.40    |
| Nevada.....             | 1,200          | 1,019          | 979            | 913               | 4.00                             | 3.30    | 4.60    | 4.70    |
| Washington.....         | 705            | 720            | 724            | 752               | 4.00                             | 3.30    | 4.50    | 5.00    |
| Oregon.....             | 2,580          | 2,355          | 2,460          | 2,497             | 3.60                             | 2.90    | 3.90    | 4.60    |
| California.....         | 3,198          | 3,038          | 2,888          | 3,261             | 4.20                             | 3.30    | 4.20    | 5.00    |
| Western.....            | 27,953         | 26,652         | 26,561         | 25,398            | 3.40                             | 2.99    | 4.01    | 4.54    |
| United States.....      | 53,155         | 51,762         | 52,212         | 49,766            | 3.40                             | 2.90    | 3.79    | 4.31    |

<sup>1</sup> Sum of total value of classes divided by total number and rounded to nearest dime for States. Division and United States averages not rounded.

<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 353.—*Sheep: Number in countries having 100,000 and over, averages 1921-25 and 1926-30, annual 1930-33*

| Country  | Date or month of estimate    | Average                  |                          | 1930                     | 1931                     | 1932                     | 1933                     |
|--|------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|  |                              | 1921-25 <sup>1</sup>     | 1926-30 <sup>1</sup>     |                          |                          |                          |                          |
| NORTH AMERICA AND WEST INDIES  |                              |                          |                          |                          |                          |                          |                          |
| United States.....   | January 1.....               | Thou-<br>sands<br>37,662 | Thou-<br>sands<br>45,448 | Thou-<br>sands<br>51,383 | Thou-<br>sands<br>52,599 | Thou-<br>sands<br>53,155 | Thou-<br>sands<br>51,762 |
| Canada.....  | June.....                    | 3,027                    | 3,431                    | 3,696                    | 3,608                    | 3,644                    | 3,886                    |
| Mexico.....  | do.....                      | <sup>2</sup> 1,362       | 3,186                    | <sup>3</sup> 3,674       |                          |                          |                          |
| Guatemala.....   |                              | 153                      | 196                      | 184                      | 147                      | 166                      |                          |
| Cuba.....  |                              | (75)                     | 102                      | <sup>4</sup> 102         |                          |                          |                          |
| Dominican Republic.....  |                              | 148                      | 162                      |                          |                          |                          |                          |
| Estimated total <sup>5</sup> .....   |                              | 42,700                   | 52,800                   |                          |                          |                          |                          |
| SOUTH AMERICA  |                              |                          |                          |                          |                          |                          |                          |
| Colombia.....  |                              | 776                      | 794                      | 810                      | 900                      |                          |                          |
| Venezuela.....   |                              | 113                      | (113)                    |                          |                          |                          |                          |
| Ecuador.....   |                              | (1,000)                  | 1,100                    | <sup>4</sup> 1,500       |                          |                          |                          |
| Peru.....  |                              | 11,363                   | <sup>3</sup> 11,209      | <sup>3</sup> 11,209      |                          |                          |                          |
| Bolivia.....   | January 1 <sup>7</sup> ..... | 3,436                    | 4,742                    | 5,020                    | 5,232                    |                          |                          |
| Chile.....   |                              | 4,332                    | <sup>3</sup> 6,263       | <sup>3</sup> 6,263       |                          | <sup>3</sup> 6,083       |                          |
| Brazil.....  | September.....               | <sup>8</sup> 7,933       | (10,702)                 |                          | 10,702                   | 10,661                   |                          |
| Uruguay.....   |                              | <sup>3</sup> 14,443      | 19,958                   | <sup>3</sup> 20,558      | (18,000)                 | 15,406                   |                          |
| Paraguay.....  | January 1 <sup>7</sup> ..... | (600)                    | (600)                    |                          |                          |                          |                          |
| Argentina.....   | do.....                      | <sup>3</sup> 36,209      | <sup>3</sup> 44,413      | <sup>2</sup> 44,413      | 609                      | 616                      |                          |
| Falkland Islands.....  |                              | 649                      | 613                      | 607                      |                          |                          |                          |
| Estimated total <sup>4</sup> .....   |                              | 80,900                   | 100,500                  |                          |                          |                          |                          |
| EUROPE   |                              |                          |                          |                          |                          |                          |                          |
| Iceland.....   |                              | 565                      | 628                      | 690                      | 691                      |                          |                          |
| England and Wales.....   | June.....                    | 14,385                   | 16,548                   | 16,316                   | 17,749                   | 18,495                   | 18,090                   |
| Scotland.....  | do.....                      | 6,827                    | 7,505                    | 7,650                    | 7,831                    | 7,916                    | 7,811                    |
| Northern Ireland.....  | do.....                      | 456                      | 622                      | 704                      | 794                      | 792                      | 750                      |
| Irish Free State.....  | do.....                      | 2,804                    | 3,255                    | 3,515                    | 3,575                    | 3,461                    | 3,405                    |
| Norway <sup>10</sup> .....   | do.....                      | 1,580                    | 1,596                    | 1,588                    | 1,662                    | 1,786                    | 1,704                    |
| Sweden.....  | July.....                    | 1,384                    | 680                      | 653                      | 635                      | 608                      | 575                      |
| Denmark.....   | do.....                      | 380                      | 213                      | 193                      |                          |                          | 179                      |
| Netherlands.....   | May-June.....                | <sup>3</sup> 668         | <sup>3</sup> 485         | <sup>3</sup> 485         |                          |                          |                          |
| Belgium.....   | January 1 <sup>7</sup> ..... | 126                      | <sup>4</sup> 122         |                          |                          |                          |                          |
| France.....  | do.....                      | 9,777                    | 10,574                   | 10,452                   | 10,152                   | 9,845                    | 9,762                    |
| Spain.....   | do.....                      | 19,229                   | 19,989                   | (19,140)                 | (19,590)                 | 20,047                   |                          |
| Portugal.....  | do.....                      | 3,721                    | 4,450                    | <sup>4</sup> 4,000       |                          |                          |                          |
| Italy.....   | March-April.....             | 12,014                   | 11,310                   | <sup>3</sup> 10,269      |                          |                          |                          |
| Switzerland.....   | April.....                   | 245                      | 170                      |                          | 185                      |                          |                          |
| Germany.....   | January 1 <sup>7</sup> ..... | 5,889                    | 3,953                    | 3,480                    | 3,504                    | 3,499                    | 3,405                    |
| Austria.....   | do.....                      | 526                      | <sup>3</sup> 272         | <sup>3</sup> 272         |                          |                          |                          |
| Czechoslovakia.....  | do.....                      | <sup>3</sup> 986         | 848                      | <sup>3</sup> 836         | 608                      | 531                      | 465                      |
| Hungary.....   | April.....                   | 1,661                    | 1,604                    | 1,464                    | 1,440                    | 1,210                    | 1,058                    |
| Yugoslavia.....  | January 1.....               | 7,683                    | 7,807                    | 7,736                    | 7,953                    | 8,426                    | 8,510                    |
| Greece.....  | do <sup>7</sup> .....        | 5,965                    | 6,551                    | 5,806                    | 6,799                    | 7,072                    | 6,927                    |
| Bulgaria.....  | do.....                      | 8,186                    | 8,384                    | <sup>4</sup> 7,986       |                          |                          |                          |
| Rumania.....   | do.....                      | 11,660                   | 12,936                   | 12,406                   | 12,230                   | 12,356                   | 12,293                   |
| Poland.....  | November.....                | 2,193                    | 2,244                    | 2,492                    | 2,599                    | 2,498                    | 2,557                    |
| Lithuania.....   | June 30.....                 | 1,314                    | 1,335                    | 1,097                    | 1,212                    | 1,317                    | 1,322                    |
| Latvia.....  | June.....                    | 1,240                    | 1,030                    | 873                      | 923                      | 994                      | 1,114                    |
| Estonia.....   | July.....                    | 654                      | 587                      | 467                      | 479                      | 514                      | 541                      |
| Finland.....   | September.....               | 1,526                    | 1,196                    | 924                      | 920                      | 965                      |                          |
| Union of Soviet Socialist Republics <sup>11</sup> .....                          | Summer.....                  | 98,100                   | 122,780                  | 99,000                   | 70,700                   | 47,400                   | 45,700                   |
| Estimated total excluding Union of Soviet Socialist Republics <sup>6</sup> ..... |                              | 123,600                  | 127,100                  |                          |                          |                          |                          |
| AFRICA   |                              |                          |                          |                          |                          |                          |                          |
| Ethiopia.....  |                              | (2,000)                  | 4,000                    | <sup>4</sup> 4,000       |                          |                          |                          |
| Morocco.....   |                              | 7,533                    | 8,364                    | 7,976                    | 6,613                    | 7,556                    |                          |
| Algeria.....   | September.....               | 5,943                    | 6,170                    | 7,172                    | 4,671                    | 5,269                    | 5,262                    |
| Libia (Italian).....   |                              | 1,043                    | 931                      | 682                      |                          |                          |                          |
| Tunis.....   | January 1 <sup>7</sup> ..... | 1,794                    | 2,055                    | 2,461                    | 2,976                    | 2,475                    | 2,981                    |
| French West Africa.....  |                              | 3,742                    | 4,563                    | 5,211                    | 5,677                    | 5,470                    |                          |
| French Sudan.....  |                              | 2,173                    | 2,576                    | 3,000                    | 3,100                    | 3,100                    |                          |
| Gold Coast.....  |                              | 373                      | 432                      | 684                      | 684                      | 684                      |                          |
| Nigeria, including British Cameroons.....  |                              | 1,711                    | 3,004                    | 2,478                    | 2,353                    | 2,028                    |                          |
| Egypt.....   | September.....               | 1,013                    | 1,138                    | 1,129                    | 1,239                    | 1,344                    | 1,345                    |
| Anglo-Egyptian Sudan.....  |                              | 1,638                    | 2,160                    | 2,200                    | 2,250                    | 2,250                    |                          |
| British Somaliland.....  |                              | (2,000)                  | 1,800                    | 2,000                    | 2,500                    | 2,500                    |                          |
| Italian Somaliland.....  | March 31.....                | 1,666                    | 914                      | 847                      |                          |                          |                          |
| Eritrea (Italian) <sup>12</sup> .....  |                              | (1,106)                  | 1,216                    | 1,233                    |                          |                          |                          |
| Kenya.....   | March-June.....              | 2,600                    | 2,908                    | 3,228                    | <sup>3</sup> 243         |                          |                          |
| French Cameroons.....  |                              | (103)                    | 216                      | 319                      | 520                      | 320                      |                          |
| Uganda.....  | January 1 <sup>7</sup> ..... | 386                      | 831                      | 806                      | 792                      | 908                      | 844                      |
| French Equatorial Africa.....  |                              | (700)                    | 845                      | 1,004                    | 1,024                    | 1,080                    |                          |
| Belgian Congo.....   |                              | 304                      | 282                      | 272                      | 244                      | 332                      |                          |

See footnotes at end of table.

TABLE 353.—*Sheep: Number in countries having 100,000 and over, averages 1921-25 and 1926-30, annual 1930-33—Continued*

| Country  | Date or month of estimate    | Average                |                      | 1930                | 1931                 | 1932                 | 1933                 |
|--|------------------------------|------------------------|----------------------|---------------------|----------------------|----------------------|----------------------|
|  |                              | 1921-25 <sup>1</sup>   | 1926-30 <sup>1</sup> |                     |                      |                      |                      |
| AFRICA—continued   |                              | Thous-<br>sands        | Thous-<br>sands      | Thous-<br>sands     | Thous-<br>sands      | Thous-<br>sands      | Thous-<br>sands      |
| Ruanda.....  |                              | 150                    | 289                  |                     | 290                  | 315                  |                      |
| British Southwest Africa.....  |                              | 954                    | 1,249                | 1,311               | 1,397                | 1,524                | 994                  |
| Bechuanaland.....  | January 1.....               | 125                    | 159                  | 179                 | 180                  | 181                  | 200                  |
| Union of South Africa.....   | August.....                  | 32,561                 | 43,129               | 48,520              | <sup>13</sup> 51,000 | <sup>13</sup> 48,200 | <sup>13</sup> 43,700 |
| Basutoland.....  | January 1 <sup>1</sup> ..... | 1,954                  | 2,146                | 2,233               | 2,829                | 1,949                | 1,885                |
| Rhodesia, Southern.....  | do. <sup>2</sup> .....       | 333                    | 349                  | 354                 | 360                  | 376                  | 376                  |
| Tanganyika Territory.....  | do.....                      | (1,600)                | 2,032                | 2,262               | 2,233                | 2,281                |                      |
| Madagascar.....  | do.....                      | 110                    | 188                  | 165                 | 207                  | 189                  |                      |
| Estimated total <sup>4</sup> .....   |                              | 76,100                 | 93,600               |                     |                      |                      |                      |
| ASIA   |                              |                        |                      |                     |                      |                      |                      |
| Arabia.....  |                              | (3,500)                | <sup>6</sup> 3,500   | <sup>6</sup> 3,500  |                      |                      |                      |
| Cyprus.....  | March.....                   | 237                    | 259                  | 290                 | 306                  | 304                  |                      |
| Turkey, European and Asiatic.....  |                              | 10,458                 | 11,853               | 10,498              | 11,762               | 11,768               | 11,070               |
| Iraq (Mesopotamia) <sup>12</sup> .....   | February.....                | 5,270                  | 5,534                | 5,349               | 5,464                | 4,307                |                      |
| Palestine.....   | March.....                   | 271                    | 249                  | 253                 | 306                  | 248                  |                      |
| Transjordan.....   |                              | (236)                  | 237                  | 229                 | 292                  | 261                  |                      |
| Iran (Persia).....   |                              | 16,562                 | 15,460               | <sup>4</sup> 16,000 |                      |                      |                      |
| Syria and Lebanon.....   |                              | 1,797                  | 2,035                | 2,682               | 2,969                | 2,080                |                      |
| India:   |                              |                        |                      |                     |                      |                      |                      |
| British.....   | January-April.....           | 22,412                 | 23,733               | <sup>3</sup> 25,540 | 25,295               | 25,286               |                      |
| Native States.....   | do.....                      | 12,299                 | 13,578               | <sup>3</sup> 19,089 | 18,295               |                      |                      |
| China, including Turkestan, Manchuria, Inner Mongolia, Philippines.....                              | January 1 <sup>7</sup> ..... | <sup>14</sup> (30,000) | <sup>15</sup> 26,000 |                     |                      |                      | <sup>15</sup> 26,000 |
| Netherlands Indies:  |                              |                        |                      |                     |                      |                      |                      |
| Java and Madura.....   | do.....                      | 915                    | 1,292                |                     |                      |                      | 1,588                |
| Outer possessions.....   | do.....                      | 115                    | 121                  |                     |                      |                      | 216                  |
| Estimated total, excluding Union of Soviet Socialist Republics <sup>4</sup> .....                    |                              | 114,300                | 114,100              |                     |                      |                      |                      |
| OCEANIA  |                              |                        |                      |                     |                      |                      |                      |
| Australia.....   | January 1 <sup>7</sup> ..... | 85,556                 | 103,329              | 104,558             | 110,568              | 110,619              | 112,915              |
| New Zealand.....   | April.....                   | 23,382                 | 27,516               | 30,841              | 29,793               | 28,692               | 27,756               |
| Estimated total <sup>4</sup> .....   |                              | 109,000                | 130,900              |                     |                      |                      |                      |
| Total countries reporting all Periods:   |                              |                        |                      |                     |                      |                      |                      |
| To 1932 (57) <sup>16</sup> .....   |                              | 467,981                | 551,106              | 545,387             | 526,170              | 496,607              |                      |
| To 1933 (32) <sup>16</sup> .....   |                              | 379,506                | 451,258              | 441,676             | 424,649              | 398,754              | 390,451              |
| Estimated world total including Union of Soviet Socialist Republics <sup>4</sup> <sup>17</sup> ..... |                              | 644,700                | 742,200              |                     |                      |                      |                      |

<sup>1</sup> Average for 5-year period if available; otherwise, for any year or years within this period except a otherwise stated.

<sup>2</sup> Incomplete.

<sup>3</sup> Census figures.

<sup>4</sup> Year 1929 or nearest year.

<sup>5</sup> These totals include countries with less than 100,000; interpolations for a few countries not reporting each year, and rough estimates for some others.

<sup>6</sup> Unofficial.

<sup>7</sup> Estimates for countries reporting as of Dec. 31 have been considered as of Jan. 1 of following year; i. e., figures for numbers of sheep in France as of Dec. 31, 1929, have been placed in 1930 column, etc.

<sup>8</sup> Census 1920.

<sup>9</sup> June 1930.

<sup>10</sup> In rural communities only.

<sup>11</sup> Years 1921-28 from Livestock Industry in the Soviet Union. Later figures from Pravda, Jan. 28, 1934, and Socialist Agriculture, Nov. 27, 1934. Sheep numbers for 1929-33 estimated from total number of sheep and goats.

<sup>12</sup> Goats included.

<sup>13</sup> Estimate based on change in sheep numbers in June compared with preceding June.

<sup>14</sup> Estimate based on increases in 1920 in 20 Provinces which supported 80 percent of total number in China in 1914.

<sup>15</sup> Estimate based on official estimate for 1932 or 1933 published in the Chinese Economic Bulletin for 22 Provinces which supported 77 percent of total in 1914. The official estimate excluding Turkestan and Inner Mongolia for 1932 or 1933 was 18,935,000. Estimates for this territory and for Manchuria included with China in this table.

<sup>16</sup> Comparable totals for numbers of countries indicated.

<sup>17</sup> Comparable estimated world totals by countries were as follows in millions of head: 1909-13, North America, Central America, and West Indies, 49.6; South America, 93.2; Europe (excluding Union of Soviet Socialist Republics), 134.4; Africa, 71.2; Asia (excluding Union of Soviet Socialist Republics), 115.3; Oceania, 114.7; estimated world total, including Union of Soviet Socialist Republics, 691.6.

Bureau of Agricultural Economics; compiled from official sources and the International Institute of Agriculture unless otherwise stated. Figures in parentheses are interpolated. See wool issue of Foreign Crops and Markets usually published in May, and World Wool Prospects published monthly by the Bureau, for later figures.

TABLE 354.—*Sheep: Receipts at principal public stockyards and at public stockyards, 1925-34*

| Year                    | Chi-<br>cago           | Den-<br>ver            | East<br>St.<br>Louis   | Fort<br>Worth          | Kansas<br>City         | Omaha                  | South<br>St.<br>Joseph | South<br>St.<br>Paul   | Sioux<br>City          | Total<br>nine<br>mar-<br>kets <sup>1</sup> | All<br>other<br>stock-<br>yards<br>report-<br>ing | Total<br>all<br>stock-<br>yards<br>report-<br>ing <sup>1</sup> |
|-------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|--|---|--|
|                         | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i>                     | <i>Thou-<br/>sands</i>                            | <i>Thou-<br/>sands</i>   |
| 1925.....               | 3,969                  | 2,357                  | 559                    | 314                    | 1,500                  | 2,420                  | 1,143                  | 545                    | 360                    | 13,166                                     | 8,934   | 22,100   |
| 1926.....               | 4,405                  | 1,826                  | 636                    | 445                    | 1,762                  | 2,780                  | 1,803                  | 773                    | 449                    | 14,378                                     | 9,490   | 23,868   |
| 1927.....               | 3,829                  | 1,908                  | 574                    | 445                    | 1,616                  | 2,604                  | 1,348                  | 705                    | 527                    | 13,555                                     | 10,384  | 23,939   |
| 1928.....               | 3,868                  | 2,295                  | 510                    | 458                    | 1,767                  | 3,037                  | 1,580                  | 891                    | 568                    | 14,974                                     | 10,623  | 25,597   |
| 1929.....               | 3,785                  | 2,290                  | 534                    | 540                    | 1,753                  | 3,031                  | 1,636                  | 1,139                  | 840                    | 15,548                                     | 11,320  | 26,868   |
| 1930.....               | 4,335                  | 2,062                  | 584                    | 432                    | 2,016                  | 3,410                  | 1,634                  | 1,354                  | 1,188                  | 17,015                                     | 12,793  | 29,808   |
| 1931.....               | 4,489                  | 2,499                  | 661                    | 1,173                  | 2,244                  | 3,510                  | 1,572                  | 1,690                  | 1,279                  | 19,118                                     | 13,905  | 33,023   |
| 1932.....               | 3,922                  | 2,834                  | 711                    | 1,198                  | 1,837                  | 2,388                  | 1,291                  | 1,522                  | 776                    | 16,479                                     | 12,827  | 29,306   |
| 1933.....               | 3,536                  | 2,902                  | 659                    | 779                    | 1,672                  | 2,125                  | 1,233                  | 1,552                  | 857                    | 15,316                                     | 11,868  | 27,184   |
| 1934 <sup>1</sup> ..... | 3,003                  | 3,109                  | 650                    | 597                    | 1,738                  | 1,968                  | 1,144                  | 1,584                  | 1,167                  | 14,958                                     | 11,180  | 26,138   |

<sup>1</sup> Rounded totals of complete figures.<sup>2</sup> Includes sheep purchased for Federal Surplus Relief Corporation from Sept. 14 to Dec. 15.

Bureau of Agricultural Economics; compiled from data of the livestock and meat-reporting service of the Bureau.

Receipts 1900-24 are available in 1924 Yearbook, table 540.

TABLE 355.—*Sheep: Receipts and stocker and feeder shipments at United States public stockyards, 1925-34*

## RECEIPTS

| Year                    | Jan.                   | Feb.                   | Mar.                   | Apr.                   | May                    | June                   | July                   | Aug.                   | Sept.                  | Oct.                   | Nov.                   | Dec.                   | Total                  |
|-------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|                         | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> |
| 1925.....               | 1,467                  | 1,388                  | 1,504                  | 1,641                  | 1,689                  | 1,603                  | 1,699                  | 2,064                  | 2,627                  | 3,193                  | 1,712                  | 1,608                  | 22,100                 |
| 1926.....               | 1,548                  | 1,496                  | 1,694                  | 1,502                  | 1,717                  | 1,913                  | 1,739                  | 2,277                  | 3,279                  | 3,090                  | 1,917                  | 1,706                  | 23,868                 |
| 1927.....               | 1,740                  | 1,501                  | 1,558                  | 1,486                  | 2,013                  | 1,816                  | 1,676                  | 2,209                  | 2,848                  | 3,587                  | 1,896                  | 1,609                  | 23,939                 |
| 1928.....               | 1,705                  | 1,669                  | 1,520                  | 1,591                  | 1,952                  | 1,913                  | 1,898                  | 2,362                  | 3,386                  | 3,938                  | 2,053                  | 1,610                  | 25,597                 |
| 1929.....               | 1,877                  | 1,544                  | 1,527                  | 2,012                  | 2,173                  | 1,752                  | 2,119                  | 2,545                  | 3,355                  | 4,093                  | 2,168                  | 1,703                  | 26,868                 |
| 1930.....               | 1,903                  | 1,803                  | 2,151                  | 2,230                  | 2,334                  | 2,230                  | 2,266                  | 2,583                  | 3,580                  | 3,784                  | 2,607                  | 2,307                  | 29,808                 |
| 1931.....               | 2,175                  | 1,964                  | 2,120                  | 2,713                  | 2,810                  | 2,587                  | 2,535                  | 3,270                  | 3,900                  | 3,956                  | 2,811                  | 2,182                  | 33,023                 |
| 1932.....               | 2,363                  | 2,035                  | 2,115                  | 2,412                  | 2,429                  | 2,428                  | 2,240                  | 2,919                  | 3,239                  | 3,266                  | 2,203                  | 1,657                  | 29,306                 |
| 1933.....               | 1,914                  | 1,795                  | 1,844                  | 2,097                  | 2,403                  | 2,091                  | 2,228                  | 2,795                  | 2,911                  | 3,268                  | 2,064                  | 1,774                  | 27,184                 |
| 1934 <sup>1</sup> ..... | 1,820                  | 1,456                  | 1,570                  | 1,838                  | 2,114                  | 1,810                  | 2,152                  | 2,622                  | 3,324                  | 4,067                  | 1,833                  | 1,542                  | 26,138                 |

## STOCKER AND FEEDER SHIPMENTS

| Year                    | Jan.                   | Feb.                   | Mar.                   | Apr.                   | May                    | June                   | July                   | Aug.                   | Sept.                  | Oct.                   | Nov.                   | Dec.                   | Total                  |
|-------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|                         | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> | <i>Thou-<br/>sands</i> |
| 1925.....               | 138                    | 119                    | 94                     | 109                    | 178                    | 137                    | 193                    | 421                    | 857                    | 1,392                  | 475                    | 219                    | 4,33                   |
| 1926.....               | 156                    | 107                    | 83                     | 124                    | 130                    | 287                    | 260                    | 567                    | 1,093                  | 1,150                  | 493                    | 223                    | 4,67                   |
| 1927.....               | 207                    | 136                    | 140                    | 118                    | 259                    | 257                    | 215                    | 389                    | 943                    | 1,560                  | 497                    | 174                    | 4,89                   |
| 1928.....               | 116                    | 101                    | 95                     | 133                    | 205                    | 278                    | 234                    | 564                    | 1,080                  | 1,466                  | 544                    | 193                    | 5,01                   |
| 1929.....               | 188                    | 115                    | 122                    | 210                    | 218                    | 223                    | 231                    | 639                    | 1,027                  | 1,831                  | 575                    | 183                    | 5,56                   |
| 1930.....               | 126                    | 101                    | 99                     | 134                    | 142                    | 216                    | 206                    | 465                    | 907                    | 1,024                  | 761                    | 282                    | 4,46                   |
| 1931.....               | 184                    | 105                    | 103                    | 189                    | 178                    | 239                    | 243                    | 718                    | 1,262                  | 1,181                  | 655                    | 182                    | 5,28                   |
| 1932.....               | 124                    | 80                     | 77                     | 143                    | 100                    | 172                    | 181                    | 460                    | 535                    | 803                    | 501                    | 196                    | 3,37                   |
| 1933.....               | 108                    | 82                     | 67                     | 107                    | 130                    | 100                    | 108                    | 347                    | 498                    | 857                    | 461                    | 143                    | 3,00                   |
| 1934 <sup>1</sup> ..... | 111                    | 79                     | 81                     | 135                    | 155                    | 115                    | 190                    | 397                    | 774                    | 908                    | 283                    | 133                    | 3,86                   |

<sup>1</sup> Includes sheep purchased for Federal Surplus Relief Corporation from Sept. 14 to Dec. 15.

Bureau of Agricultural Economics. Compiled from data of livestock and meat-reporting service of the Bureau. Earlier data in 1930 Yearbook, table 399.



TABLE 356.—*Farm prices of sheep, per head, by ages, United States, Jan. 1, 1925-35*

| Year      | Under 1 year old | Ewes 1 year and over | Wethers 1 year and over | Rams           | Year      | Under 1 year old | Ewes 1 year and over | Wethers 1 year and over | Rams           |
|-----------|------------------|----------------------|-------------------------|----------------|-----------|------------------|----------------------|-------------------------|----------------|
|           | <i>Dollars</i>   | <i>Dollars</i>       | <i>Dollars</i>          | <i>Dollars</i> |           | <i>Dollars</i>   | <i>Dollars</i>       | <i>Dollars</i>          | <i>Dollars</i> |
| 1925..... | 8.53             | 10.02                | 7.13                    | 16.91          | 1931..... | 4.64             | 5.42                 | 3.43                    | 12.91          |
| 1926..... | 9.04             | 11.01                | 7.32                    | 18.45          | 1932..... | 2.87             | 3.47                 | 2.38                    | 8.20           |
| 1927..... | 7.91             | 10.32                | 6.60                    | 18.73          | 1933..... | 2.66             | 2.88                 | 1.79                    | 6.87           |
| 1928..... | 8.45             | 10.86                | 7.23                    | 19.63          | 1934..... | 3.49             | 3.75                 | 2.27                    | 9.16           |
| 1929..... | 8.93             | 11.19                | 7.64                    | 20.27          | 1935..... | 3.71             | 4.40                 | 2.68                    | 9.53           |
| 1930..... | 7.85             | 9.10                 | 6.44                    | 19.61          |           |                  |                      |                         |                |

Bureau of Agricultural Economics. Based on returns from special price reporters. Average price, by States, weighted by estimated numbers each age group.

TABLE 357.—*Sheep: Average price per 100 pounds received by producers, United States, 1925-34*

| Year      | Jan. 15     | Feb. 15     | Mar. 15     | Apr. 15     | May 15      | June 15     | July 15     | Aug. 15     | Sept. 15    | Oct. 15     | Nov. 15     | Dec. 15     | Weighted average |
|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------------|
|           | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i>      |
| 1925..... | 7.86        | 8.41        | 8.20        | 8.42        | 7.53        | 7.04        | 7.17        | 7.32        | 7.27        | 7.31        | 7.51        | 7.79        | 7.70             |
| 1926..... | 7.95        | 8.20        | 7.66        | 7.67        | 7.78        | 7.56        | 7.09        | 6.92        | 7.13        | 6.93        | 6.75        | 6.95        | 7.43             |
| 1927..... | 6.87        | 7.16        | 7.41        | 7.40        | 7.68        | 7.27        | 7.16        | 7.13        | 7.06        | 7.05        | 7.42        | 7.38        | 7.26             |
| 1928..... | 7.52        | 7.60        | 7.85        | 8.11        | 8.09        | 7.84        | 7.56        | 7.53        | 7.58        | 7.50        | 7.50        | 7.29        | 7.68             |
| 1929..... | 7.84        | 7.98        | 8.36        | 8.40        | 8.09        | 7.86        | 7.25        | 7.32        | 7.01        | 6.83        | 6.75        | 6.61        | 7.55             |
| 1930..... | 6.91        | 6.84        | 6.59        | 6.44        | 5.86        | 5.52        | 4.65        | 4.13        | 4.21        | 3.93        | 3.98        | 3.96        | 5.36             |
| 1931..... | 4.04        | 4.15        | 4.24        | 4.24        | 3.91        | 3.28        | 3.01        | 3.00        | 2.80        | 2.63        | 2.63        | 2.52        | 3.43             |
| 1932..... | 2.48        | 2.67        | 2.91        | 2.86        | 2.52        | 2.36        | 2.37        | 2.19        | 2.17        | 2.03        | 2.06        | 2.04        | 2.40             |
| 1933..... | 2.10        | 2.16        | 2.18        | 2.29        | 2.47        | 2.46        | 2.59        | 2.57        | 2.52        | 2.46        | 2.38        | 2.48        | 2.37             |
| 1934..... | 2.71        | 3.46        | 3.66        | 3.63        | 3.54        | 2.98        | 2.73        | 2.59        | 2.45        | 2.52        | 2.55        | 2.66        | 2.98             |

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by number of sheep Jan. 1, to obtain a price for the United States; yearly price obtained by weighting monthly prices by Federal inspected slaughter. Data for earlier years in 1928 Yearbook, table 407. Only monthly prices are comparable.

TABLE 358.—*Lambs: Average price per 100 pounds received by producers, United States, 1925-26 to 1934-35*

| Year         | June 15     | July 15     | Aug. 15     | Sept. 15    | Oct. 15     | Nov. 15     | Dec. 15     | Jan. 15     | Feb. 15     | Mar. 15     | Apr. 15     | May 15      | Weighted average |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------------|
|              | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i>      |
| 1925-26..... | 11.62       | 11.71       | 11.80       | 11.95       | 12.04       | 12.20       | 12.67       | 12.79       | 12.02       | 11.56       | 11.32       | 11.78       | 11.98            |
| 1926-27..... | 12.07       | 11.62       | 11.12       | 11.32       | 11.31       | 11.11       | 10.92       | 10.65       | 10.84       | 11.55       | 11.97       | 11.92       | 11.36            |
| 1927-28..... | 11.95       | 11.44       | 11.15       | 11.14       | 11.22       | 11.42       | 11.39       | 11.34       | 11.90       | 12.31       | 12.73       | 13.03       | 11.76            |
| 1928-29..... | 13.18       | 12.25       | 11.83       | 11.97       | 11.57       | 11.50       | 11.41       | 12.23       | 12.60       | 13.12       | 13.46       | 12.79       | 12.31            |
| 1929-30..... | 12.31       | 11.90       | 11.46       | 11.08       | 10.97       | 10.74       | 10.76       | 11.10       | 10.46       | 9.63        | 9.02        | 8.92        | 10.71            |
| 1930-31..... | 9.02        | 8.08        | 6.82        | 6.67        | 6.15        | 6.21        | 6.18        | 6.30        | 6.59        | 6.84        | 6.94        | 6.96        | 6.92             |
| 1931-32..... | 6.42        | 5.60        | 5.33        | 5.04        | 4.64        | 4.46        | 4.19        | 4.43        | 4.58        | 5.05        | 5.13        | 4.78        | 4.97             |
| 1932-33..... | 4.49        | 4.37        | 4.11        | 4.11        | 3.95        | 3.91        | 3.95        | 4.09        | 4.19        | 4.27        | 4.34        | 4.72        | 4.21             |
| 1933-34..... | 5.18        | 5.24        | 5.26        | 5.08        | 5.01        | 4.95        | 4.92        | 5.50        | 6.55        | 6.70        | 6.82        | 6.95        | 5.66             |
| 1934-35..... | 6.37        | 5.64        | 5.02        | 4.86        | 4.81        | 4.84        | 5.01        |             |             |             |             |             |                  |

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by number of lambs Jan. 1, to obtain a price for the United States; yearly price obtained by weighting monthly prices by receipts at principal markets. Data for earlier years in 1928 Yearbook table 408. Only monthly prices are comparable.

TABLE 359.—*Sheep and lambs: Average price per 100 pounds at Chicago, by months, 1925-34*

| SHEEP     |             |             |             |             |             |             |             |             |             |             |             |             |                      |
|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------|
| Year      | Jan.        | Feb.        | Mar.        | Apr.        | May         | June        | July        | Aug.        | Sept.       | Oct.        | Nov.        | Dec.        | Average <sup>1</sup> |
|           | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i>          |
| 1925----- | 10.33       | 9.69        | 9.22        | 7.84        | 7.96        | 6.25        | 7.43        | 6.83        | 6.95        | 7.64        | 8.16        | 9.57        | 8.16                 |
| 1926----- | 9.72        | 9.18        | 8.82        | 8.87        | 7.97        | 5.85        | 5.97        | 6.50        | 6.25        | 6.12        | 5.88        | 5.86        | 7.25                 |
| 1927----- | 6.94        | 8.03        | 8.88        | 9.62        | 7.44        | 5.88        | 6.25        | 6.47        | 6.14        | 6.00        | 6.40        | 6.41        | 7.04                 |
| 1928----- | 7.03        | 8.96        | 9.47        | 10.16       | 8.53        | 6.12        | 6.28        | 6.72        | 6.34        | 6.18        | 5.84        | 7.03        | 7.39                 |
| 1929----- | 9.32        | 8.78        | 9.72        | 10.34       | 6.78        | 6.28        | 5.85        | 5.34        | 4.56        | 4.70        | 5.38        | 5.41        | 6.87                 |
| 1930----- | 6.50        | 5.53        | 5.59        | 5.66        | 5.31        | 3.38        | 3.12        | 3.63        | 3.50        | 3.10        | 3.34        | 3.22        | 4.32                 |
| 1931----- | 3.97        | 4.25        | 4.54        | 3.90        | 2.78        | 1.62        | 2.50        | 2.03        | 1.58        | 1.94        | 2.16        | 2.18        | 2.79                 |
| 1932----- | 2.62        | 3.25        | 3.75        | 3.06        | 1.41        | 1.65        | 1.66        | 1.92        | 1.62        | 1.59        | 1.82        | 2.08        | 2.20                 |
| 1933----- | 2.30        | 2.34        | 2.48        | 2.38        | 2.51        | 2.34        | 2.09        | 2.25        | 2.14        | 2.03        | 2.18        | 2.55        | 2.30                 |
| 1934----- | 3.42        | 4.41        | 5.06        | 5.06        | 2.65        | 1.59        | 1.88        | 2.34        | 2.17        | 1.90        | 2.09        | 2.84        | 2.95                 |

## LAMBS

|           |       |       |       |       |       |       |       |       |       |       |       |       |       |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1925----- | 18.28 | 17.59 | 16.28 | 14.85 | 13.06 | 15.86 | 15.11 | 14.88 | 15.19 | 15.20 | 15.44 | 16.15 | 15.66 |
| 1926----- | 15.28 | 13.78 | 13.48 | 14.38 | 15.30 | 16.66 | 14.31 | 14.20 | 14.05 | 13.88 | 13.25 | 12.57 | 14.26 |
| 1927----- | 12.64 | 13.28 | 15.27 | 15.87 | 14.75 | 15.66 | 14.25 | 13.68 | 13.46 | 13.70 | 13.80 | 13.14 | 14.12 |
| 1928----- | 13.16 | 15.39 | 16.26 | 16.81 | 16.10 | 16.84 | 15.61 | 14.72 | 14.29 | 13.12 | 13.31 | 14.31 | 14.99 |
| 1929----- | 16.37 | 16.53 | 17.07 | 16.82 | 13.62 | 15.34 | 14.38 | 13.50 | 13.19 | 12.72 | 12.72 | 13.22 | 14.62 |
| 1930----- | 13.28 | 11.03 | 10.28 | 9.38  | 9.73  | 12.28 | 10.18 | 9.39  | 8.24  | 7.72  | 7.34  | 7.44  | 9.69  |
| 1931----- | 8.43  | 8.19  | 8.31  | 9.06  | 8.55  | 7.72  | 6.62  | 6.88  | 6.49  | 5.88  | 5.64  | 5.32  | 7.26  |
| 1932----- | 5.88  | 6.26  | 6.83  | 6.69  | 5.12  | 6.22  | 5.72  | 5.56  | 5.12  | 5.60  | 5.82  | 5.92  | 5.92  |
| 1933----- | 5.90  | 5.51  | 5.41  | 5.25  | 6.36  | 7.50  | 7.82  | 7.52  | 7.16  | 7.00  | 6.95  | 7.37  | 6.65  |
| 1934----- | 8.58  | 9.66  | 9.25  | 9.54  | 8.47  | 8.84  | 7.42  | 6.98  | 6.59  | 6.41  | 6.66  | 7.76  | 8.01  |

<sup>1</sup> Simple average of monthly prices.

Bureau of Agricultural Economics. Bulk of sales prices from data of the livestock and meat reporting service of the Bureau.

Data for 1901-24 are available in 1932 Yearbook, table 356.

TABLE 360.—*Sheep and lambs: Annual slaughter under Federal inspection, 1907-34, estimated equivalent of Federal inspection, 1900-1906, and estimated total slaughter (including farm) in United States, 1900-1934<sup>1</sup>*

| Year      | Federally inspected | Total <sup>2</sup> | Year      | Federally inspected | Total <sup>2</sup> | Year      | Federally inspected | Total <sup>2</sup> |
|-----------|---------------------|--------------------|-----------|---------------------|--------------------|-----------|---------------------|--------------------|
|           | <i>Thou-</i>        | <i>Thou-</i>       |           | <i>Thou-</i>        | <i>Thou-</i>       |           | <i>Thou-</i>        | <i>Thou-</i>       |
|           | <i>sands</i>        | <i>sands</i>       |           | <i>sands</i>        | <i>sands</i>       |           | <i>sands</i>        | <i>sands</i>       |
| 1900----- | 8,940               | 12,015             | 1912----- | 14,979              | 19,247             | 1924----- | 11,991              | 15,441             |
| 1901----- | 9,996               | 12,358             | 1913----- | 14,406              | 18,520             | 1925----- | 12,001              | 15,454             |
| 1902----- | 10,519              | 13,038             | 1914----- | 14,229              | 18,290             | 1926----- | 12,961              | 16,889             |
| 1903----- | 10,508              | 13,683             | 1915----- | 12,212              | 15,756             | 1927----- | 12,883              | 16,589             |
| 1904----- | 10,046              | 13,126             | 1916----- | 11,941              | 15,408             | 1928----- | 13,488              | 17,348             |
| 1905----- | 10,026              | 12,823             | 1917----- | 9,345               | 12,149             | 1929----- | 14,023              | 18,048             |
| 1906----- | 10,385              | 13,371             | 1918----- | 10,320              | 13,359             | 1930----- | 16,697              | 21,132             |
| 1907----- | 10,252              | 13,360             | 1919----- | 12,691              | 16,317             | 1931----- | 18,071              | 23,038             |
| 1908----- | 10,305              | 13,526             | 1920----- | 10,982              | 14,180             | 1932----- | 17,899              | 22,945             |
| 1909----- | 11,343              | 14,725             | 1921----- | 13,005              | 16,710             | 1933----- | 17,354              | -----              |
| 1910----- | 11,408              | 14,797             | 1922----- | 10,929              | 14,112             | 1934----- | 17,412              | -----              |
| 1911----- | 14,020              | 18,057             | 1923----- | 11,529              | 14,862             |           |                     |                    |

<sup>1</sup> Federal Meat Inspection Act, effective Oct. 1, 1906.<sup>2</sup> Subject to revision.Bureau of Animal Industry and Bureau of Agricultural Economics.  
Data for years 1880-99 last printed in 1933 Yearbook, table 349.

TABLE 361.—*Sheep and lambs: Shipments, slaughter, value of production, and income by States, 1933*

| State and division      | Shipments and local slaughter |                 |                |                 | Inshipments, stocker, feeding, and breeding |                 |                |                 |
|-------------------------|-------------------------------|-----------------|----------------|-----------------|---|-----------------|----------------|-----------------|
|                         | Sheep                         |                 | Lambs          |                 | Sheep                                       |                 | Lambs          |                 |
|                         | Head                          | Total weight    | Head           | Total weight    | Head  | Total weight    | Head           | Total weight    |
|                         | Thou-<br>sands                | 1,000<br>pounds | Thou-<br>sands | 1,000<br>pounds | Thou-<br>sands                              | 1,000<br>pounds | Thou-<br>sands | 1,000<br>pounds |
| Maine.....              | 8                             | 800             | 14             | 840             |   |                 |                |                 |
| New Hampshire.....      | 2                             | 200             | 5              | 300             |   |                 |                |                 |
| Vermont.....            | 6                             | 600             | 8              | 480             |   |                 |                |                 |
| Massachusetts.....      | 1                             | 110             | 3              | 195             |   |                 |                |                 |
| Rhode Island.....       |                               |                 | 1              | 65              |   |                 |                |                 |
| Connecticut.....        | 2                             | 220             | 2              | 130             |   |                 |                |                 |
| New York.....           | 54                            | 6,318           | 198            | 13,879          | 2   | 200             | 36             | 2,160           |
| New Jersey.....         |                               |                 | 1              | 75              |   |                 |                |                 |
| Pennsylvania.....       | 21                            | 2,205           | 214            | 14,980          | 1   | 100             | 2              | 120             |
| North Atlantic.....     | 94                            | 10,453          | 446            | 30,944          | 3   | 300             | 38             | 2,280           |
| Ohio.....               | 129                           | 14,835          | 947            | 68,290          | 1   | 100             | 41             | 2,665           |
| Indiana.....            | 54                            | 6,480           | 636            | 54,060          | 5   | 500             | 169            | 10,985          |
| Illinois.....           | 90                            | 10,800          | 706            | 60,010          | 24  | 2,400           | 300            | 21,000          |
| Michigan.....           | 110                           | 13,200          | 686            | 58,310          | 5   | 500             | 108            | 7,344           |
| Wisconsin.....          | 47                            | 5,170           | 362            | 28,960          | 2   | 220             | 163            | 11,410          |
| East North Central..... | 430                           | 50,485          | 3,337          | 267,630         | 37  | 3,720           | 781            | 53,404          |
| Minnesota.....          | 77                            | 8,540           | 913            | 75,761          | 13  | 1,300           | 381            | 22,800          |
| Iowa.....               | 97                            | 11,640          | 1,066          | 85,280          | 27  | 2,700           | 500            | 32,500          |
| Missouri.....           | 101                           | 11,110          | 918            | 68,850          | 11  | 1,155           | 225            | 14,625          |
| North Dakota.....       | 92                            | 10,120          | 614            | 46,050          |   |                 | 67             | 4,355           |
| South Dakota.....       | 135                           | 14,890          | 606            | 45,450          | 5   | 550             | 50             | 3,750           |
| Nebraska.....           | 58                            | 6,655           | 1,466          | 128,968         | 27  | 2,430           | 1,300          | 78,000          |
| Kansas.....             | 26                            | 2,860           | 723            | 64,960          | 11  | 1,100           | 420            | 27,300          |
| West North Central..... | 586                           | 65,775          | 6,305          | 515,319         | 94  | 9,235           | 2,943          | 183,390         |
| North Central.....      | 1,016                         | 116,260         | 9,642          | 782,949         | 181   | 12,955          | 3,724          | 236,794         |
| Delaware.....           |                               |                 | 3              | 195             |   |                 |                |                 |
| Maryland.....           | 4                             | 440             | 74             | 5,920           | 1   | 110             | 1              | 65              |
| Virginia.....           | 10                            | 1,200           | 380            | 30,400          | 1   | 90              | 3              | 240             |
| West Virginia.....      | 41                            | 4,510           | 419            | 38,520          |   |                 | 1              | 80              |
| North Carolina.....     | 5                             | 425             | 44             | 2,420           |   |                 |                |                 |
| South Carolina.....     |                               |                 | 6              | 270             |   |                 |                |                 |
| Georgia.....            |                               |                 | 7              | 350             |   |                 |                |                 |
| Florida.....            | 4                             | 340             | 4              | 200             |   |                 |                |                 |
| South Atlantic.....     | 64                            | 6,915           | 937            | 73,275          | 2   | 200             | 5              | 385             |
| Kentucky.....           | 1                             | 120             | 810            | 60,750          | 3   | 300             | 48             | 3,300           |
| Tennessee.....          | 53                            | 5,880           | 267            | 19,275          | 2   | 220             |                |                 |
| Alabama.....            | 7                             | 560             | 3              | 150             |   |                 |                |                 |
| Mississippi.....        | 13                            | 1,040           | 12             | 600             |   |                 |                |                 |
| Arkansas.....           | 8                             | 840             | 19             | 1,140           |   |                 |                |                 |
| Louisiana.....          | 11                            | 1,023           | 34             | 1,700           |   |                 |                |                 |
| Oklahoma.....           | 26                            | 2,730           | 100            | 6,500           |   |                 | 14             | 700             |
| Texas.....              | 347                           | 32,965          | 1,707          | 102,570         | 30  | 3,000           | 45             | 2,700           |
| South Central.....      | 466                           | 45,108          | 2,942          | 192,685         | 35  | 3,520           | 107            | 6,760           |
| Montana.....            | 199                           | 21,890          | 1,344          | 100,800         |   |                 |                |                 |
| Idaho.....              | 175                           | 20,125          | 1,633          | 130,640         | 49  | 4,900           | 648            | 41,990          |
| Wyoming.....            | 259                           | 26,686          | 920            | 59,520          | 10  | 1,000           | 74             | 4,810           |
| Colorado.....           | 182                           | 19,110          | 2,137          | 170,960         | 321   | 33,705          | 1,149          | 68,940          |
| New Mexico.....         | 108                           | 10,800          | 507            | 32,955          | 20  | 2,000           | 5              | 350             |
| Arizona.....            | 35                            | 3,745           | 230            | 17,250          |   |                 |                |                 |
| Utah.....               | 203                           | 21,721          | 675            | 47,250          | 30  | 3,000           | 72             | 5,040           |
| Nevada.....             | 47                            | 4,900           | 242            | 15,730          | 1   | 105             | 5              | 325             |
| Washington.....         | 45                            | 4,950           | 366            | 29,280          | 6   | 600             | 20             | 1,400           |
| Oregon.....             | 122                           | 13,054          | 858            | 65,208          |   |                 | 4              | 304             |
| California.....         | 193                           | 19,300          | 1,631          | 122,675         | 40  | 3,600           | 200            | 12,000          |
| Western.....            | 1,568                         | 166,281         | 10,543         | 792,568         | 477   | 48,910          | 2,175          | 135,159         |
| United States.....      | 3,208                         | 345,017         | 24,510         | 1,872,421       | 648   | 65,885          | 6,049          | 381,378         |

TABLE 361.—*Sheep and lambs: Shipments, slaughter, value of production, and income by States, 1933—Continued*

| State and division      | Farm slaughter |              |            |              | Value of amount consumed on farms | Re-ceipts from sales | Gross income  | Value of production |
|-------------------------|----------------|--------------|------------|--------------|-----------------------------------|----------------------|---------------|---------------------|
|                         | Sheep          |              | Lambs      |              |                                   |                      |               |                     |
|                         | Head           | Total weight | Head       | Total weight |                                   |                      |               |                     |
|                         | Thou-sands     | 1,000 pounds | Thou-sands | 1,000 pounds | 1,000 dollars                     | 1,000 dollars        | 1,000 dollars | 1,000 dollars       |
| Maine.....              | 2              | 200          | 9          | 540          | 9                                 | 100                  | 109           | 91                  |
| New Hampshire.....      |                |              | 1          | 60           | 1                                 | 26                   | 27            | 27                  |
| Vermont.....            |                |              | 2          | 120          | 1                                 | 42                   | 43            | 39                  |
| Massachusetts.....      |                |              | 1          | 65           | 1                                 | 18                   | 19            | 18                  |
| Rhode Island.....       |                |              |            |              |                                   | 4                    | 4             | 4                   |
| Connecticut.....        |                |              | 1          | 65           | 1                                 | 19                   | 20            | 15                  |
| New York.....           | 10             | 1,170        | 15         | 1,065        | 8                                 | 827                  | 835           | 863                 |
| New Jersey.....         |                |              | 1          | 75           | 1                                 | 8                    | 9             | 8                   |
| Pennsylvania.....       | 7              | 770          | 10         | 700          | 8                                 | 917                  | 925           | 992                 |
| North Atlantic.....     | 19             | 2,140        | 40         | 2,690        | 30                                | 1,961                | 1,991         | 2,057               |
| Ohio.....               | 4              | 480          | 10         | 800          | 35                                | 3,660                | 3,695         | 3,776               |
| Indiana.....            | 2              | 250          | 2          | 160          | 11                                | 2,463                | 2,474         | 2,396               |
| Illinois.....           | 3              | 360          | 9          | 765          | 41                                | 1,994                | 2,035         | 1,904               |
| Michigan.....           | 1              | 120          | 8          | 600          | 12                                | 2,861                | 2,873         | 2,770               |
| Wisconsin.....          | 3              | 375          | 7          | 630          | 29                                | 772                  | 801           | 1,009               |
| East North Central..... | 13             | 1,585        | 36         | 2,955        | 128                               | 11,750               | 11,878        | 11,855              |
| Minnesota.....          | 6              | 744          | 7          | 567          | 35                                | 2,650                | 2,685         | 3,121               |
| Iowa.....               | 4              | 500          | 8          | 640          | 41                                | 2,548                | 2,589         | 3,146               |
| Missouri.....           | 2              | 240          | 4          | 300          | 17                                | 3,152                | 3,169         | 3,310               |
| North Dakota.....       | 6              | 720          | 9          | 720          | 44                                | 2,080                | 2,124         | 1,830               |
| South Dakota.....       | 4              | 440          | 6          | 450          | 30                                | 2,311                | 2,341         | 2,144               |
| Nebraska.....           | 3              | 345          | 5          | 375          | 26                                | 1,937                | 1,963         | 2,458               |
| Kansas.....             | 3              | 360          | 5          | 380          | 22                                | 1,319                | 1,341         | 1,788               |
| West North Central..... | 28             | 3,349        | 44         | 3,432        | 215                               | 15,997               | 16,212        | 17,797              |
| North Central.....      | 41             | 4,934        | 80         | 6,387        | 343                               | 27,747               | 28,090        | 29,652              |
| Delaware.....           |                |              | 1          | 65           | 1                                 | 16                   | 17            | 13                  |
| Maryland.....           |                |              | 2          | 160          | 4                                 | 384                  | 388           | 391                 |
| Virginia.....           | 11             | 1,320        | 13         | 1,040        | 49                                | 1,757                | 1,806         | 1,772               |
| West Virginia.....      | 3              | 330          | 5          | 400          | 17                                | 1,920                | 1,937         | 1,996               |
| North Carolina.....     | 1              | 90           | 9          | 495          | 14                                | 150                  | 164           | 158                 |
| South Carolina.....     |                |              | 1          | 45           | 1                                 | 15                   | 16            | 19                  |
| Georgia.....            | 2              | 170          | 2          | 100          | 6                                 | 22                   | 28            | 27                  |
| Florida.....            |                |              | 1          | 50           | 1                                 | 21                   | 22            | 20                  |
| South Atlantic.....     | 17             | 1,910        | 34         | 2,355        | 93                                | 4,285                | 4,378         | 4,396               |
| Kentucky.....           | 3              | 360          | 4          | 300          | 17                                | 3,654                | 3,671         | 3,825               |
| Tennessee.....          | 4              | 440          | 6          | 450          | 24                                | 1,289                | 1,313         | 1,252               |
| Alabama.....            |                |              | 3          | 150          | 3                                 | 26                   | 29            | 18                  |
| Mississippi.....        | 1              | 80           | 3          | 150          | 5                                 | 64                   | 69            | 56                  |
| Arkansas.....           | 1              | 105          | 2          | 120          | 4                                 | 74                   | 78            | 70                  |
| Louisiana.....          | 2              | 186          | 4          | 200          | 8                                 | 110                  | 118           | 101                 |
| Oklahoma.....           | 1              | 110          | 2          | 130          | 7                                 | 349                  | 356           | 263                 |
| Texas.....              | 10             | 900          | 25         | 1,750        | 77                                | 4,528                | 4,605         | 6,118               |
| South Central.....      | 22             | 2,181        | 49         | 3,250        | 145                               | 10,094               | 10,239        | 11,723              |
| Montana.....            | 8              | 960          | 14         | 1,050        | 54                                | 5,469                | 5,523         | 5,691               |
| Idaho.....              | 10             | 1,150        | 20         | 1,600        | 90                                | 4,263                | 4,353         | 5,225               |
| Wyoming.....            | 10             | 1,100        | 20         | 1,400        | 81                                | 3,303                | 3,384         | 2,530               |
| Colorado.....           | 10             | 1,050        | 18         | 1,280        | 75                                | 2,640                | 2,715         | 4,456               |
| New Mexico.....         | 60             | 6,000        | 25         | 1,625        | 180                               | 1,671                | 1,851         | 1,807               |
| Arizona.....            | 72             | 7,704        | 48         | 3,600        | 342                               | 1,012                | 1,354         | 1,391               |
| Utah.....               | 30             | 3,210        | 20         | 1,500        | 129                               | 2,435                | 2,564         | 2,344               |
| Nevada.....             | 7              | 700          | 8          | 520          | 42                                | 958                  | 1,000         | 910                 |
| Washington.....         | 6              | 720          | 10         | 800          | 22                                | 1,454                | 1,476         | 1,505               |
| Oregon.....             | 10             | 1,100        | 17         | 1,292        | 60                                | 3,513                | 3,573         | 3,712               |
| California.....         | 25             | 2,500        | 30         | 2,310        | 124                               | 5,695                | 5,819         | 5,671               |
| Western.....            | 248            | 26,194       | 228        | 16,977       | 1,199                             | 32,413               | 33,612        | 35,542              |
| United States.....      | 347            | 37,359       | 431        | 31,659       | 1,810                             | 76,500               | 78,310        | 83,370              |

Bureau of Agricultural Economics; preliminary estimates of Division of Crop and Livestock Estimates. The figures on income as shown in tables 461 and 462 are computed from the data shown in this table. The difference between value of production and income arises from the fact that in computing value of production, allowance is made for changes in inventory numbers between the beginning and end of the year, while in computing income these changes are not used.

TABLE 362.—*Mutton and lamb: International trade, average 1925-29, annual 1930-33*

| Country                            | Average 1925-29 |                 | 1930            |                 | 1931            |                 | 1932            |                 | 1933 <sup>1</sup> |                 |
|------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-----------------|
|                                    | Exports         | Im-ports        | Exports         | Im-ports        | Exports         | Im-ports        | Exports         | Im-ports        | Exports           | Im-ports        |
| PRINCIPAL EXPORT-<br>ING COUNTRIES | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds   | 1,000<br>pounds |
| New Zealand.....                   | 301,079         | 0               | 381,914         | 0               | 387,861         | 0               | 431,292         | 0               | 427,535           | 0               |
| Argentina.....                     | 176,547         | 0               | 177,693         | 0               | 184,106         | 0               | 156,494         | 0               | 138,116           | 0               |
| Australia <sup>2</sup> .....       | 72,153          | 17              | 100,411         | 0               | 109,253         | 0               | 165,281         | 0               | 166,798           | 0               |
| Uruguay.....                       | 41,048          | 0               | 62,304          | 0               | 40,312          | 0               | 13,454          | 0               | -----             | 0               |
| Netherlands.....                   | 14,942          | 1,049           | 11,342          | 550             | 11,015          | 598             | 8,698           | 349             | 6,690             | 392             |
| Brazil.....                        | 1,758           | 0               | 7,402           | 0               | 3,736           | 0               | 3,040           | 0               | 1,271             | 0               |
| Irish Free State.....              | 1,370           | 344             | 2,003           | 239             | 2,780           | 255             | 801             | 181             | 4,979             | -----           |
| Estonia.....                       | 557             | 0               | 681             | 0               | 768             | 0               | 827             | 0               | 828               | 0               |
| Poland.....                        | 120             | 9               | 1,112           | 0               | 2,629           | 0               | 1,365           | 0               | 1,145             | 0               |
| Total.....                         | 609,574         | 1,419           | 744,862         | 809             | 742,460         | 853             | 781,282         | 530             | 747,362           | 392             |
| PRINCIPAL IMPORT-<br>ING COUNTRIES |                 |                 |                 |                 |                 |                 |                 |                 |                   |                 |
| United Kingdom.....                | 0               | 329,309         | 0               | 730,271         | 0               | 813,107         | 0               | 793,389         | 0                 | 768,543         |
| France.....                        | 213             | 22,035          | 143             | 27,679          | 448             | 38,116          | 384             | 18,892          | 205               | 19,895          |
| Germany.....                       | 637             | 7,868           | 2,457           | 9,679           | 1,480           | 342             | 94              | 442             | 10                | 347             |
| United States.....                 | 1,087           | 7,255           | 1,251           | 8,181           | 550             | 5,503           | 259             | 5,069           | 321               | 6,215           |
| Norway.....                        | 0               | 4,581           | 0               | 4,904           | 0               | 3,580           | 0               | 3,311           | 0                 | 1,480           |
| Belgium.....                       | 702             | 3,763           | 1,724           | 4,391           | 592             | 4,756           | 105             | 6,472           | 62                | 4,290           |
| Canada.....                        | 1,501           | 2,335           | 242             | 4,412           | 333             | 1,294           | 348             | 702             | 406               | 297             |
| Denmark.....                       | 9               | 2,152           | 6               | 2,638           | 5               | 2,552           | 5               | 452             | 19                | 341             |
| Sweden.....                        | 36              | 1,068           | 25              | 1,515           | 7               | 1,887           | 1               | 1,380           | 1                 | 1,432           |
| Total.....                         | 4,185           | 680,356         | 5,848           | 793,670         | 3,415           | 871,087         | 1,196           | 829,999         | 1,024             | 802,849         |

<sup>1</sup> Preliminary.<sup>2</sup> Year ended June 30.

Bureau of Agricultural Economics; official sources.

TABLE 363.—*Wool: Production, exports, imports, and amount available for consumption, of combing and clothing wool, and imports of carpet wool, United States, 1910-34*

| Calendar year | Combing and clothing |           |           |  |  |  | Carpet, im-<br>ports, less<br>reexports |
|---------------|----------------------|-----------|-----------|--|--|--|---|
|               | Production           |           |           | Total ex-<br>ports,<br>domestic <sup>1</sup> | Imports,<br>less reex-<br>ports <sup>1</sup> | Available<br>for con-<br>sumption <sup>2</sup> |   |
|               | Shorn                | Pulled    | Total     |  |  |  |   |
|               | 1,000 lb.            | 1,000 lb. | 1,000 lb. | 1,000 lb.                                    | 1,000 lb.                                    | 1,000 lb.                                      | 1,000 lb.                               |
| 1910.....     | 281,363              | 40,000    | 321,363   | <sup>3</sup> 48                              | 94,374                                       | 415,689  | 76,705                                  |
| 1911.....     | 277,548              | 41,000    | 318,548   | ( <sup>4</sup> )                             | 50,928                                       | 369,476  | 101,484                                 |
| 1912.....     | 262,543              | 41,500    | 304,043   | ( <sup>4</sup> )                             | 111,653                                      | 415,696  | 124,649                                 |
| 1913.....     | 252,675              | 43,500    | 296,175   | <sup>3</sup> 77                              | 61,306                                       | 357,404  | 86,416                                  |
| 1914.....     | 247,192              | 43,000    | 290,192   | <sup>3</sup> 335                             | 165,882                                      | 455,730  | 84,277                                  |
| 1915.....     | 245,726              | 40,000    | 285,726   | <sup>3</sup> 8,158                           | 307,354                                      | 584,922  | 93,175                                  |
| 1916.....     | 244,890              | 43,600    | 288,490   | 8,919  | 364,355                                      | 648,026  | 76,167                                  |
| 1917.....     | 241,892              | 40,000    | 281,892   | 1,827  | 341,864                                      | 621,929  | 73,002                                  |
| 1918.....     | 256,870              | 42,000    | 298,870   | 407  | 377,682                                      | 676,145  | 69,292                                  |
| 1919.....     | 249,958              | 48,300    | 298,258   | 2,840  | 336,774                                      | 632,192  | 96,873                                  |
| 1920.....     | 250,617              | 42,900    | 293,517   | 8,845  | 207,419                                      | 492,091  | 35,093                                  |
| 1921.....     | 241,465              | 43,500    | 289,965   | 1,927  | 217,233                                      | 505,271  | 97,820                                  |
| 1922.....     | 228,109              | 42,000    | 270,109   | 453  | 189,486                                      | 459,142  | 172,828                                 |
| 1923.....     | 229,895              | 42,500    | 272,395   | 535  | 243,270                                      | 515,130  | 121,618                                 |
| 1924.....     | 237,131              | 43,800    | 280,931   | 309  | 94,495                                       | 375,117  | 140,684                                 |
| 1925.....     | 252,832              | 46,800    | 299,632   | 273  | 171,980                                      | 471,339  | 157,679                                 |
| 1926.....     | 268,900              | 49,600    | 318,500   | 292  | 170,142                                      | 488,350  | 115,235                                 |
| 1927.....     | 289,909              | 50,100    | 340,009   | 323  | 109,850                                      | 449,536  | 143,871                                 |
| 1928.....     | 314,588              | 51,900    | 366,488   | 485  | 87,132                                       | 453,135  | 148,794                                 |
| 1929.....     | 327,566              | 54,500    | 382,066   | 239  | 100,352                                      | 482,179  | 174,483                                 |
| 1930.....     | 350,311              | 61,900    | 412,211   | 162  | 68,000                                       | 480,049  | 92,756                                  |
| 1931.....     | 372,228              | 66,100    | 438,328   | 274  | 36,772                                       | 474,826  | 119,939                                 |
| 1932.....     | 345,350              | 67,100    | 412,450   | 179  | 12,020                                       | 424,291  | 40,697                                  |
| 1933.....     | 364,721              | 64,200    | 428,921   | 19   | 43,554                                       | 472,456  | 130,256                                 |
| 1934.....     | 357,658              | 60,500    | 418,158   | 119  | <sup>3</sup> 23,156                          | 441,195  | 85,181                                  |

<sup>1</sup> Hair of angora goat, alpaca, and other like animals included in exports for all years, and in imports and reexports prior to 1914.<sup>2</sup> In computing these figures, stocks not taken into consideration.<sup>3</sup> Exports for fiscal year ended June 30 of the year shown.<sup>4</sup> No transactions.<sup>5</sup> Imports for consumption.

Bureau of Agricultural Economics. Production figures, 1910-13, from the National Association of Wool Manufacturers; beginning 1914, from the Bureau; imports and exports from the Bureau of Foreign and Domestic Commerce.

NOTE.—The total United States production is combing and clothing wool only.

Table 364.—*Wool, shorn: Estimated production by States, 1932-34*

| State and division      | Production          |                     |                     | Number of fleeces <sup>1</sup> |                              |                              | Weight per fleece <sup>2</sup> |               |               |
|-------------------------|---------------------|---------------------|---------------------|--------------------------------|------------------------------|------------------------------|--------------------------------|---------------|---------------|
|                         | 1932                | 1933                | 1934                | 1932                           | 1933                         | 1934                         | 1932                           | 1933          | 1934          |
|                         | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>Thou-</i><br><i>sands</i>   | <i>Thou-</i><br><i>sands</i> | <i>Thou-</i><br><i>sands</i> | <i>Pounds</i>                  | <i>Pounds</i> | <i>Pounds</i> |
| Maine.....              | 444                 | 384                 | 378                 | 74                             | 64                           | 62                           | 6.0                            | 6.0           | 6.1           |
| New Hampshire.....      | 101                 | 88                  | 90                  | 16                             | 14                           | 14                           | 6.3                            | 6.3           | 6.4           |
| Vermont.....            | 238                 | 208                 | 211                 | 35                             | 32                           | 31                           | 6.8                            | 6.5           | 6.8           |
| Massachusetts.....      | 59                  | 59                  | 53                  | 10                             | 10                           | 9                            | 5.9                            | 5.9           | 5.9           |
| Rhode Island.....       | 12                  | 12                  | 12                  | 2                              | 2                            | 2                            | 5.9                            | 6.0           | 6.0           |
| Connecticut.....        | 50                  | 50                  | 48                  | 9                              | 9                            | 8                            | 5.6                            | 5.6           | 6.0           |
| New York.....           | 2,736               | 2,701               | 2,775               | 380                            | 370                          | 375                          | 7.2                            | 7.3           | 7.4           |
| New Jersey.....         | 36                  | 37                  | 38                  | 6                              | 6                            | 6                            | 6.0                            | 6.2           | 6.3           |
| Pennsylvania.....       | 3,270               | 3,411               | 3,589               | 436                            | 461                          | 485                          | 7.5                            | 7.4           | 7.4           |
| North Atlantic.....     | 6,946               | 6,950               | 7,194               | 968                            | 968                          | 992                          | 7.2                            | 7.2           | 7.3           |
| Ohio.....               | 15,455              | 15,810              | 16,506              | 1,908                          | 1,928                        | 1,965                        | 8.1                            | 8.2           | 8.4           |
| Indiana.....            | 4,782               | 4,599               | 4,800               | 655                            | 630                          | 640                          | 7.3                            | 7.3           | 7.5           |
| Illinois.....           | 4,559               | 5,749               | 4,468               | 619                            | 818                          | 585                          | 7.4                            | 7.0           | 7.6           |
| Michigan.....           | 8,282               | 7,840               | 7,556               | 1,010                          | 980                          | 958                          | 8.2                            | 8.0           | 8.2           |
| Wisconsin.....          | 3,145               | 2,774               | 2,664               | 425                            | 380                          | 365                          | 7.4                            | 7.3           | 7.3           |
| East North Central..... | 36,223              | 36,772              | 36,294              | 4,617                          | 4,736                        | 4,513                        | 7.8                            | 7.8           | 8.0           |
| Minnesota.....          | 6,638               | 6,814               | 7,137               | 885                            | 885                          | 915                          | 7.5                            | 7.7           | 7.8           |
| Iowa.....               | 7,901               | 7,410               | 7,593               | 1,013                          | 938                          | 975                          | 7.8                            | 7.9           | 8.1           |
| Missouri.....           | 7,048               | 7,551               | 7,384               | 1,054                          | 1,109                        | 1,082                        | 6.7                            | 6.6           | 6.8           |
| North Dakota.....       | 7,636               | 7,056               | 6,972               | 820                            | 840                          | 840                          | 8.3                            | 8.4           | 8.3           |
| South Dakota.....       | 8,768               | 9,200               | 9,900               | 1,096                          | 1,150                        | 1,245                        | 8.0                            | 8.0           | 8.0           |
| Nebraska.....           | 1,885               | 2,731               | 2,511               | 254                            | 366                          | 308                          | 7.4                            | 7.5           | 7.5           |
| Kansas.....             | 3,168               | 3,461               | 3,328               | 463                            | 505                          | 467                          | 6.8                            | 6.9           | 7.1           |
| West North Central..... | 43,044              | 44,023              | 44,990              | 5,685                          | 5,793                        | 5,832                        | 7.6                            | 7.6           | 7.7           |
| North Central.....      | 79,267              | 80,795              | 81,284              | 10,302                         | 10,529                       | 10,345                       | 7.7                            | 7.7           | 7.9           |
| Delaware.....           | 24                  | 24                  | 18                  | 4                              | 4                            | 3                            | 6.0                            | 6.0           | 6.0           |
| Maryland.....           | 570                 | 583                 | 573                 | 92                             | 94                           | 94                           | 6.2                            | 6.2           | 6.1           |
| Virginia.....           | 2,185               | 2,166               | 2,012               | 446                            | 442                          | 428                          | 4.9                            | 4.9           | 4.7           |
| West Virginia.....      | 2,994               | 3,021               | 2,870               | 565                            | 581                          | 552                          | 5.3                            | 5.2           | 5.2           |
| North Carolina.....     | 346                 | 360                 | 352                 | 77                             | 80                           | 75                           | 4.5                            | 4.5           | 4.7           |
| South Carolina.....     | 48                  | 48                  | 48                  | 12                             | 12                           | 12                           | 4.0                            | 4.0           | 4.0           |
| Georgia.....            | 112                 | 112                 | 103                 | 31                             | 31                           | 31                           | 3.6                            | 3.6           | 3.5           |
| Florida.....            | 115                 | 114                 | 115                 | 37                             | 38                           | 37                           | 3.1                            | 3.0           | 3.1           |
| South Atlantic.....     | 6,394               | 6,428               | 6,096               | 1,264                          | 1,282                        | 1,232                        | 5.1                            | 5.0           | 4.9           |
| Kentucky.....           | 4,250               | 4,170               | 4,238               | 850                            | 834                          | 865                          | 5.0                            | 5.0           | 4.9           |
| Tennessee.....          | 1,533               | 1,621               | 1,457               | 365                            | 377                          | 354                          | 4.2                            | 4.3           | 4.2           |
| Alabama.....            | 144                 | 151                 | 126                 | 40                             | 42                           | 35                           | 3.6                            | 3.6           | 3.6           |
| Mississippi.....        | 257                 | 257                 | 263                 | 78                             | 78                           | 73                           | 3.3                            | 3.3           | 3.6           |
| Arkansas.....           | 220                 | 230                 | 212                 | 49                             | 51                           | 46                           | 4.5                            | 4.5           | 4.6           |
| Louisiana.....          | 403                 | 402                 | 371                 | 112                            | 115                          | 103                          | 3.6                            | 3.5           | 3.6           |
| Oklahoma.....           | 1,102               | 1,154               | 1,312               | 145                            | 148                          | 160                          | 7.6                            | 7.8           | 8.2           |
| Texas.....              | 57,105              | 74,800              | 60,485              | 7,050                          | 7,875                        | 7,608                        | 8.1                            | 9.5           | 8.0           |
| South Central.....      | 65,014              | 82,785              | 68,494              | 8,689                          | 9,520                        | 9,244                        | 7.5                            | 8.7           | 7.4           |
| Montana.....            | 32,300              | 33,276              | 35,966              | 3,400                          | 3,540                        | 3,707                        | 9.5                            | 9.4           | 9.7           |
| Idaho.....              | 16,500              | 17,372              | 18,445              | 1,940                          | 2,020                        | 2,170                        | 8.5                            | 8.6           | 8.5           |
| Wyoming.....            | 31,513              | 29,808              | 33,212              | 3,463                          | 3,240                        | 3,496                        | 9.1                            | 9.2           | 9.5           |
| Colorado.....           | 12,320              | 12,774              | 13,122              | 1,600                          | 1,539                        | 1,661                        | 7.7                            | 7.8           | 7.9           |
| New Mexico.....         | 16,884              | 17,430              | 17,136              | 2,520                          | 2,490                        | 2,520                        | 6.7                            | 7.0           | 6.8           |
| Arizona.....            | 5,220               | 4,988               | 4,980               | 870                            | 860                          | 830                          | 6.0                            | 5.8           | 6.0           |
| Utah.....               | 18,160              | 17,630              | 17,512              | 2,270                          | 2,060                        | 1,990                        | 8.0                            | 8.6           | 8.8           |
| Nevada.....             | 7,125               | 6,708               | 6,358               | 950                            | 860                          | 883                          | 7.5                            | 7.8           | 7.2           |
| Washington.....         | 5,506               | 5,640               | 6,208               | 605                            | 613                          | 640                          | 9.1                            | 9.2           | 9.7           |
| Oregon.....             | 17,982              | 18,105              | 19,775              | 2,220                          | 2,130                        | 2,273                        | 8.1                            | 8.5           | 8.7           |
| California.....         | 24,219              | 24,032              | 21,876              | 3,370                          | 3,128                        | 3,209                        | 7.2                            | 7.98          | 6.82          |
| Western.....            | 187,729             | 187,763             | 194,590             | 23,208                         | 22,470                       | 23,379                       | 8.1                            | 8.4           | 8.3           |
| United States.....      | 345,350             | 364,721             | 357,558             | 44,431                         | 44,769                       | 45,192                       | 7.77                           | 8.15          | 7.91          |

<sup>1</sup> Include fleeces taken at commercial feeding plants. California figures include some fleeces taken from early lambs.

<sup>2</sup> In States where sheep are shorn twice a year, principally Texas and California, this figure covers wool per head of sheep shorn and not weight per fleece.

Bureau of Agricultural Economics: estimates of the Crop Reporting Board.

TABLE 365.—*Wool: Estimated production in specified countries, average 1926-30, annual 1929-34*

| Country  | Average,<br>1926-30       | 1929                      | 1930                      | 1931                      | 1932                      | 1933                      | 1934 <sup>1</sup>         |
|--|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| <b>SOUTHERN HEMISPHERE</b>   |                           |                           |                           |                           |                           |                           |                           |
|  | <i>Million<br/>pounds</i> | <i>Million<br/>pounds</i> | <i>Million<br/>pounds</i> | <i>Million<br/>pounds</i> | <i>Million<br/>pounds</i> | <i>Million<br/>pounds</i> | <i>Million<br/>pounds</i> |
| Australia.....   | 926.1                     | 937.6                     | 912.1                     | 1,006.6                   | 1,061.7                   | 975.6                     | <sup>2</sup> 1,010.0      |
| New Zealand <sup>3,4</sup> .....   | 266.4                     | 272.9                     | 271.1                     | 282.8                     | 288.4                     | 300.5                     | <sup>5</sup> 307.0        |
| Chile.....   | 26.7                      | <sup>3</sup> 24.7         | 26.7                      | 26.3                      | <sup>6</sup> 25.9         | 25.7                      | -----                     |
| Argentina <sup>6</sup> .....   | 332.8                     | 312.0                     | 334.0                     | 364.0                     | 340.0                     | 348.0                     | 366.0                     |
| Uruguay <sup>8</sup> .....   | 140.1                     | 151.1                     | 152.6                     | <sup>7</sup> 106.0        | <sup>7</sup> 110.2        | <sup>7</sup> 104.7        | 115.0                     |
| Union of South Africa <sup>5</sup> .....   | 294.1                     | 303.8                     | 305.0                     | 306.0                     | 316.3                     | 274.0                     | 245.0                     |
| Total 5 countries reporting to 1934.....   | 1,959.5                   | 1,977.4                   | 1,974.8                   | 2,065.4                   | 2,116.6                   | 2,002.8                   | 2,043.0                   |
| <b>NORTHERN HEMISPHERE</b>   |                           |                           |                           |                           |                           |                           |                           |
| <b>North America:</b>  |                           |                           |                           |                           |                           |                           |                           |
| United States:   |                           |                           |                           |                           |                           |                           |                           |
| Shorn.....   | 310.3                     | 327.6                     | 350.3                     | 372.2                     | 345.4                     | 564.7                     | 357.7                     |
| Pulled <sup>9</sup> .....  | 53.6                      | 54.5                      | 61.9                      | 66.1                      | 67.1                      | 64.2                      | (60.5)                    |
| Total.....   | 363.9                     | 382.1                     | 412.2                     | 438.3                     | 412.5                     | 428.9                     | 418.2                     |
| Canada.....  | 19.5                      | 20.3                      | 21.0                      | 20.4                      | 20.5                      | 19.3                      | 19.5                      |
| <b>Europe:</b>   |                           |                           |                           |                           |                           |                           |                           |
| United Kingdom (England and<br>Wales, Scotland, and Northern<br>Ireland).....                                    | 111.2                     | 110.4                     | 111.0                     | 113.0                     | 119.0                     | 120.0                     | 110.0                     |
| Irish Free State.....  | 18.0                      | <sup>10</sup> 18.6        | <sup>10</sup> 18.9        | <sup>10</sup> 19.3        | <sup>10</sup> 19.6        | <sup>10</sup> 19.6        | <sup>10</sup> 17.0        |
| Norway.....  | 5.6                       | 5.0                       | 5.2                       | 5.5                       | 5.7                       | <sup>8</sup> 5.8          | 6.0                       |
| France.....  | 46.5                      | 46.1                      | 45.2                      | 44.1                      | 43.2                      | 43.0                      | <sup>8</sup> 42.4         |
| Spain <sup>11</sup> .....  | 73.7                      | 73.2                      | (66.0)                    | 66.1                      | <sup>8</sup> 70.0         | -----                     | -----                     |
| Italy <sup>11</sup> .....  | 53.3                      | 49.6                      | 47.9                      | 44.0                      | <sup>10</sup> 42.0        | -----                     | -----                     |
| Germany.....   | 34.8                      | 31.9                      | <sup>8</sup> 30.6         | <sup>8</sup> 30.8         | <sup>8</sup> 30.8         | 30.0                      | <sup>8</sup> 29.8         |
| Czechoslovakia <sup>11</sup> .....   | 3.7                       | 3.7                       | 3.7                       | 2.7                       | 2.3                       | 2.0                       | 2.1                       |
| Hungary.....   | 12.2                      | (11.5)                    | 13.0                      | 12.8                      | 8.8                       | <sup>8</sup> 8.0          | <sup>8</sup> 8.0          |
| Yugoslavia <sup>8</sup> .....  | 28.3                      | 28.0                      | 28.0                      | 28.8                      | 30.5                      | 30.8                      | 31.1                      |
| Greece.....  | 14.0                      | <sup>8</sup> 15.6         | <sup>8</sup> 12.2         | 14.6                      | 14.9                      | 16.0                      | <sup>8</sup> 15.6         |
| Rumania <sup>11</sup> .....  | 66.9                      | 65.5                      | 63.6                      | 65.1                      | 62.7                      | 62.4                      | -----                     |
| Poland <sup>8</sup> .....  | 9.5                       | 10.4                      | 9.6                       | 9.8                       | 9.5                       | 9.6                       | <sup>8</sup> 9.6          |
| Latvia.....  | 3.5                       | 3.4                       | 3.3                       | 3.3                       | 3.6                       | 4.1                       | <sup>8</sup> 6.5          |
| Total 13 countries reporting to<br>1934.....   | 287.3                     | 284.6                     | 280.7                     | 284.7                     | 287.9                     | 288.9                     | 278.1                     |
| <b>Africa and Asia:<sup>12</sup></b>   |                           |                           |                           |                           |                           |                           |                           |
| Algeria.....   | 41.9                      | 47.2                      | 49.3                      | 28.1                      | 39.3                      | <sup>8</sup> 30.3         | <sup>8</sup> 41.2         |
| Turkey.....  | 9.9                       | 5.0                       | 14.1                      | 14.8                      | 10.2                      | 14.0                      | <sup>13</sup> 12.0        |
| Total 17 Northern Hemisphere<br>countries reporting to 1934.....   | 722.5                     | 739.2                     | 777.3                     | 786.3                     | 770.4                     | 790.4                     | 769.0                     |
| Total 22 Northern and Southern<br>Hemisphere countries report-<br>ing to 1934.....                               | 2,682.0                   | 2,716.6                   | 2,752.1                   | 2,851.7                   | 2,887.0                   | 2,793.2                   | 2,812.0                   |
| <b>Estimated world total excluding<br/>Union of Soviet Socialist Re-<br/>publics and China<sup>14</sup>.....</b> |                           |                           |                           |                           |                           |                           |                           |
|  | 3,225.0                   | 3,251.0                   | 3,286.0                   | 3,387.0                   | 3,412.0                   | <sup>15</sup> 3,310.0     | -----                     |
| Union of Soviet Socialist Republics.....   | 362.9                     | 394.0                     | 306.0                     | <sup>16</sup> 212.0       | <sup>16</sup> 142.0       | <sup>16</sup> 138.0       | <sup>16</sup> 142.0       |
| China <sup>17</sup> .....  | 78.0                      | 78.0                      | 78.0                      | 78.0                      | 78.0                      | -----                     | -----                     |

<sup>1</sup> Preliminary.<sup>2</sup> Estimate of the National Council of Wool Selling Brokers of receipts for first 8 months of season.<sup>3</sup> Estimates based on exports alone or exports, stocks, and domestic consumption and any other available information.<sup>4</sup> Years 1924 to 1926 supplied by the Empire Marketing Board. Years 1927-28 to 1932-33 Official Yearbook of New Zealand 1934 and Monthly Abstract of New Zealand Statistics, August 1934. The estimates of Dalgety & Co. used formerly are as follows in millions of pounds, with scoured wool included at its scoured weight: Average 1926-30, 235.6; 1929, 241.8; 1930, 265.7; 1931, 265.5; 1932, 265.5; 1933, 262.7.<sup>5</sup> Estimates based on sheep numbers at date nearest shearing and other available data.<sup>6</sup> Estimates of the Buenos Aires branch of the First National Bank of Boston, based on exports, stocks, and domestic consumption except that production for 1931 and 1932 have been revised upward provisionally to take care of excess exports in 1932-33.<sup>7</sup> Preliminary estimate. Reports of increase range from 5 to 15 percent.<sup>8</sup> Estimates of C. O. Taylor, formerly United States agricultural attaché in South Africa.<sup>9</sup> Published as reported by pulleries and is mostly washed. The Bureau of the Census considers 1 pound of pulled wool the equivalent of 1½ pounds of grease.<sup>10</sup> Estimates of the Imperial Economic Committee (formerly Empire Marketing Board).<sup>11</sup> Revisions based on recent census figures of wool production or of sheep numbers.<sup>12</sup> Estimates for Asiatic countries rough approximations only.

(Footnotes continued on p. 589)

TABLE 365—*Wool: Estimated production in specified countries, average 1926-30, annual 1929-34—Continued*

## Footnotes—Continued

<sup>13</sup> Provisional estimate based on prospects of a 15 to 20 percent reduction in 1934, due to losses of sheep in Roumelia and Anatolia.

<sup>14</sup> Totals subject to revision. Few countries publish official estimates of wool production. In the absence of official figures for many countries various estimates have been used. Some have been furnished by United States Government representatives abroad and others have been based on reports of sheep numbers, average fleece weights, and any other available data. For some principal exporting countries the figures are seasonal exports alone, or estimates derived from exports, carry-over, and domestic consumption. In the case of most Asiatic countries the figures are rough commercial estimates.

<sup>15</sup> Estimate based on production in 34 countries as compared with 1932.

<sup>16</sup> Estimate based on sheep numbers and average yield as derived from official estimates for recent years. The Union of Soviet Socialist Republics program called for 353,000,000 pounds in 1931 according to the Economic Handbook of the Soviet Union, but this estimate appears much too large considering the decrease in sheep numbers since 1929.

<sup>17</sup> Unofficial estimate based on sheep numbers in 1932. Owing to poor marketing conditions in recent years exports of sheep's wool not reliable index of production.

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This table includes wool shorn during the calendar year in the Northern Hemisphere and that shorn during the season beginning July 1 or Oct. 1 of the given calendar year in the Southern Hemisphere, the bulk being shorn during the last 6 months of the given calendar year. Pulled wool is included in the total for most important countries at its grease equivalent. Figures in parentheses are interpolated or carried forward. See Foreign Crops and Markets annual wool review in May or June 1934 for table showing all countries and monthly World Wool Prospects for current revisions.

TABLE 366.—*Wool, shorn: Average price per pound received by producers, United States, 1925-34*

| Year      | Jan.<br>15   | Feb.<br>15   | Mar.<br>15   | Apr.<br>15   | May<br>15    | June<br>15   | July<br>15   | Aug.<br>15   | Sept.<br>15  | Oct.<br>15   | Nov.<br>15   | Dec.<br>15   | Weighted<br>average |
|-----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------------|
|           | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i>        |
| 1925..... | 42.8         | 43.2         | 43.0         | 40.8         | 36.9         | 35.7         | 39.4         | 38.1         | 37.8         | 37.2         | 37.8         | 39.5         | 39.6                |
| 1926..... | 38.9         | 37.7         | 34.7         | 33.2         | 32.0         | 31.4         | 31.9         | 31.9         | 32.6         | 31.6         | 31.6         | 30.1         | 33.9                |
| 1927..... | 30.9         | 31.1         | 31.3         | 30.4         | 30.1         | 30.2         | 30.7         | 31.2         | 31.2         | 30.9         | 31.1         | 32.0         | 30.6                |
| 1928..... | 33.2         | 34.4         | 35.4         | 35.6         | 37.0         | 38.7         | 37.0         | 37.0         | 36.5         | 36.0         | 35.9         | 35.6         | 36.4                |
| 1929..... | 35.9         | 35.9         | 35.5         | 33.8         | 31.3         | 30.2         | 29.4         | 29.2         | 29.0         | 28.6         | 28.5         | 27.8         | 30.2                |
| 1930..... | 27.4         | 25.9         | 23.7         | 21.4         | 19.6         | 19.2         | 19.2         | 19.8         | 20.2         | 19.6         | 19.0         | 18.4         | 19.5                |
| 1931..... | 17.4         | 16.4         | 15.9         | 15.6         | 14.4         | 13.0         | 12.7         | 13.1         | 13.2         | 12.5         | 13.1         | 12.9         | 13.5                |
| 1932..... | 12.5         | 13.0         | 12.5         | 11.0         | 8.8          | 7.2          | 7.0          | 7.4          | 9.1          | 9.5          | 9.4          | 9.2          | 8.7                 |
| 1933..... | 8.9          | 8.8          | 8.9          | 10.1         | 17.7         | 21.3         | 22.4         | 22.5         | 23.0         | 23.6         | 23.8         | 24.2         | 20.6                |
| 1934..... | 24.6         | 25.4         | 26.9         | 26.2         | 23.4         | 21.9         | 21.4         | 20.4         | 19.5         | 19.3         | 19.2         | 18.5         | <sup>1</sup> 22.3   |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by number of sheep, Jan. 1, to obtain a price for the United States. Average for the year obtained by weighting State price averages for the calendar year. Data for earlier years in 1928 Yearbook, table 422. Only monthly prices are comparable.



TABLE 367.—*Wool: Average price per pound in Boston market, 1925-34*

SCOURED BASIS, TERRITORY, GRADES 64's, 70's, 80's (FINE STRICTLY COMBING)

| Year      | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | July         | Aug.         | Sept.        | Oct.         | Nov.         | Dec.         | Average      |
|-----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|           | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> |
| 1925..... | 168          | 164          | 153          | 138          | 126          | 130          | 137          | 133          | 129          | 128          | 131          | 131          | 139          |
| 1926..... | 127          | 124          | 118          | 116          | 112          | 110          | 116          | 116          | 116          | 114          | 110          | 110          | 116          |
| 1927..... | 110          | 110          | 110          | 109          | 108          | 108          | 111          | 111          | 111          | 112          | 112          | 112          | 110          |
| 1928..... | 116          | 116          | 116          | 117          | 119          | 120          | 120          | 115          | 112          | 112          | 113          | 114          | 116          |
| 1929..... | 114          | 110          | 108          | 104          | 100          | 97           | 94           | 94           | 93           | 90           | 88           | 84           | 98           |
| 1930..... | 82           | 79           | 78           | 76           | 75           | 76           | 76           | 76           | 75           | 73           | 72           | 76           |              |
| 1931..... | 68           | 66           | 66           | 66           | 64           | 62           | 62           | 64           | 62           | 59           | 59           | 59           | 63           |
| 1932..... | 58           | 56           | 54           | 49           | 44           | 38           | 36           | 41           | 48           | 48           | 47           | 45           | 47           |
| 1933..... | 44           | 44           | 46           | 48           | 62           | 70           | 77           | 79           | 82           | 83           | 84           | 85           | 67           |
| 1934..... | 86           | 87           | 87           | 86           | 85           | 84           | 84           | 76           | 76           | 76           | 76           | 76           | 82           |

SCOURED BASIS, TERRITORY, GRADE 56's (THREE-EIGHTHS BLOOD STRICTLY COMBING)

|           |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1925..... | 136 | 136 | 125 | 109 | 98  | 99  | 105 | 101 | 102 | 102 | 108 | 109 | 111 |
| 1926..... | 103 | 99  | 93  | 91  | 89  | 89  | 90  | 90  | 91  | 93  | 93  | 91  | 92  |
| 1927..... | 90  | 90  | 90  | 90  | 88  | 88  | 90  | 91  | 91  | 94  | 94  | 94  | 91  |
| 1928..... | 97  | 99  | 100 | 106 | 107 | 108 | 107 | 108 | 104 | 104 | 104 | 104 | 104 |
| 1929..... | 104 | 104 | 101 | 95  | 89  | 88  | 88  | 90  | 90  | 89  | 87  | 82  | 92  |
| 1930..... | 75  | 70  | 67  | 64  | 62  | 62  | 62  | 62  | 62  | 60  | 59  | 58  | 63  |
| 1931..... | 55  | 52  | 51  | 51  | 48  | 46  | 49  | 51  | 51  | 48  | 48  | 48  | 50  |
| 1932..... | 49  | 49  | 46  | 42  | 37  | 32  | 30  | 34  | 43  | 42  | 41  | 39  | 40  |
| 1933..... | 38  | 37  | 38  | 41  | 58  | 63  | 70  | 72  | 76  | 78  | 79  | 82  | 61  |
| 1934..... | 82  | 82  | 82  | 80  | 78  | 78  | 78  | 67  | 66  | 66  | 66  | 66  | 74  |

GREASE BASIS, OHIO AND SIMILAR, GRADE 56's (THREE-EIGHTHS BLOOD STRICTLY COMBING)

|           |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-----------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1925..... | 70 | 69 | 66 | 55 | 46 | 49 | 53 | 52 | 50 | 52 | 54 | 54 | 56 |
| 1926..... | 54 | 53 | 49 | 46 | 44 | 43 | 44 | 44 | 44 | 45 | 46 | 45 | 46 |
| 1927..... | 45 | 45 | 45 | 44 | 42 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 45 |
| 1928..... | 50 | 52 | 52 | 53 | 55 | 57 | 56 | 55 | 55 | 55 | 56 | 56 | 54 |
| 1929..... | 56 | 55 | 54 | 50 | 45 | 44 | 45 | 45 | 45 | 45 | 44 | 42 | 48 |
| 1930..... | 39 | 36 | 34 | 32 | 29 | 30 | 30 | 30 | 30 | 30 | 29 | 28 | 31 |
| 1931..... | 26 | 25 | 24 | 23 | 22 | 22 | 22 | 28 | 24 | 24 | 24 | 24 | 24 |
| 1932..... | 24 | 23 | 22 | 20 | 17 | 15 | 14 | 17 | 22 | 22 | 20 | 20 | 20 |
| 1933..... | 20 | 20 | 19 | 20 | 29 | 33 | 34 | 36 | 39 | 41 | 41 | 42 | 31 |
| 1934..... | 42 | 42 | 42 | 39 | 34 | 32 | 32 | 32 | 31 | 30 | 30 | 28 | 35 |

Bureau of Agricultural Economics. Prices from the livestock and meat reporting service of the Bureau. Earlier data in 1931 Yearbook, table 420.

TABLE 368.—*Wool, grades 56's, 64's-67's: Average price per pound at London, clean basis, 1925-34*

GRADE 56's

| Year      | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | July         | Aug.         | Sept.        | Oct.         | Nov.         | Dec.         | Average      |
|-----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|           | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> |
| 1925..... | 105.00       | 90.80        | 89.00        | 80.90        | 72.80        | 73.55        | 74.90        | 70.75        | 66.60        | 66.80        | 66.60        | 66.60        | 77.03        |
| 1926..... | 60.80        | 60.80        | 60.80        | 59.80        | 58.30        | 56.80        | 58.80        | 59.80        | 60.80        | 59.80        | 57.00        | 58.80        | 59.36        |
| 1927..... | 58.80        | 68.00        | 71.00        | 66.00        | 66.90        | 67.40        | 67.90        | 68.40        | 68.90        | 70.95        | 73.00        | 75.00        | 68.52        |
| 1928..... | 77.00        | 80.00        | 81.10        | 79.55        | 78.00        | 77.50        | 77.00        | 74.00        | 71.00        | 70.00        | 73.00        | 74.00        | 76.01        |
| 1929..... | 75.00        | 69.95        | 63.90        | 61.80        | 58.80        | 56.75        | 54.70        | 52.70        | 50.69        | 46.64        | 50.69        | 50.69        | 67.69        |
| 1930..... | 40.55        | 40.55        | 34.47        | 35.48        | 37.51        | 37.00        | 36.00        | 34.50        | 32.44        | 30.42        | 26.36        | 26.36        | 34.30        |
| 1931..... | 21.29        | 24.33        | 24.91        | 28.39        | 26.36        | 25.35        | 24.84        | 23.32        | 21.29        | 20.26        | 24.02        | 21.09        | 24.20        |
| 1932..... | 20.73        | 28.04        | 21.61        | 19.92        | 12.38        | 18.23        | 19.60        | 20.64        | 21.69        | 20.52        | 19.79        | 19.13        | 20.27        |
| 1933..... | 20.66        | 21.03        | 19.67        | 21.63        | 24.99        | 28.00        | 32.94        | 33.77        | 36.93        | 38.90        | 51.50        | 51.16        | 31.76        |
| 1934..... | 58.91        | 54.52        | 52.00        | 51.53        | 48.40        | 42.59        | 37.81        | 35.88        | 33.29        | 35.00        | 33.26        | 35.03        | 43.18        |

GRADES 64's-67's

|           |        |        |        |        |        |        |        |        |        |        |        |        |        |
|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1925..... | 140.10 | 130.00 | 119.70 | 115.95 | 112.20 | 112.60 | 113.00 | 110.00 | 107.00 | 108.00 | 111.00 | 101.00 | 115.12 |
| 1926..... | 97.30  | 97.30  | 97.30  | 98.10  | 97.70  | 97.30  | 94.30  | 94.80  | 95.30  | 93.30  | 92.75  | 90.75  | 95.51  |
| 1927..... | 89.20  | 94.00  | 95.30  | 94.30  | 95.30  | 95.80  | 96.30  | 96.85  | 97.40  | 98.40  | 99.40  | 99.40  | 95.97  |
| 1928..... | 101.40 | 102.00 | 103.40 | 102.40 | 101.40 | 101.40 | 101.40 | 98.35  | 95.30  | 90.00  | 83.30  | 91.20  | 98.46  |
| 1929..... | 91.20  | 90.00  | 85.20  | 83.00  | 79.00  | 76.25  | 73.50  | 70.00  | 66.91  | 64.88  | 63.87  | 62.86  | 75.55  |
| 1930..... | 54.75  | 54.75  | 50.69  | 52.72  | 55.76  | 54.70  | 52.70  | 51.70  | 50.69  | 50.69  | 44.61  | 41.57  | 51.28  |
| 1931..... | 34.47  | 38.53  | 44.61  | 42.58  | 42.58  | 40.55  | 39.54  | 37.51  | 34.47  | 30.79  | 31.78  | 26.00  | 36.95  |
| 1932..... | 29.31  | 30.24  | 29.57  | 28.91  | 27.56  | 27.35  | 28.10  | 29.33  | 31.10  | 29.72  | 27.98  | 27.32  | 28.87  |
| 1933..... | 28.71  | 29.94  | 28.25  | 30.95  | 35.23  | 41.79  | 52.31  | 52.53  | 56.36  | 54.46  | 68.06  | 67.15  | 45.53  |
| 1934..... | 71.53  | 69.20  | 71.10  | 71.39  | 68.08  | 61.52  | 56.71  | 51.71  | 45.78  | 47.35  | 45.73  | 45.34  | 58.79  |

Bureau of Agriculture Economics. These data were obtained from prices given by Kreglinger &amp; Farnau for the opening and closing of each series of the London wool sales. For months when no sales were held the figures are interpolations of nearest actual prices. Conversions at monthly average rate of exchange as given in Federal Reserve Bulletins to December 1925, and October 1931 to December 1934; others at par.

TABLE 369.—Wool: International trade, average 1925-29, annual 1931-33

| Country                                       | Calendar year   |                 |                 |                 |                 |                 |                   |                 |
|---|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-----------------|
|   | Average 1925-29 |                 | 1931            |                 | 1932            |                 | 1933 <sup>1</sup> |                 |
|   | Exports         | Imports         | Exports         | Imports         | Exports         | Imports         | Exports           | Imports         |
| PRINCIPAL EXPORT-<br>ING COUNTRIES            | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds   | 1,000<br>pounds |
| Australia <sup>2</sup> .....                  | 739, 123        | 3, 990          | 812, 265        | 1, 170          | 855, 181        | 2, 153          | 349, 934          | 71              |
| Argentina.....                                | 294, 973        | 302             | 310, 252        | 84              | 289, 878        | 101             | 288, 151          | 1, 149          |
| Union of South Africa.....                    | 254, 431        | 576             | 242, 092        | 612             | 379, 095        | 1, 006          | 286, 280          | 3               |
| New Zealand.....                              | 220, 228        | 103             | 211, 719        | 6               | 238, 179        | 27              | 0                 | 0               |
| Uruguay.....                                  | 117, 856        | 0               | 144, 572        | 0               | 95, 120         | 0               | 34, 180           | 736             |
| China.....                                    | 58, 272         | 568             | 35, 310         | 747             | 38, 130         | 3 270           | 49, 017           | 18, 097         |
| British India.....                            | 50, 373         | 27, 843         | 39, 785         | 16, 118         | 30, 903         | 12, 783         | 24, 153           | 3               |
| Chile.....                                    | 26, 196         | 435             | 22, 377         | 163             | 25, 058         | 52              | 10, 720           | 2, 108          |
| Algeria.....                                  | 24, 047         | 3, 632          | 11, 066         | 1, 479          | 7, 001          | 1, 466          | 0                 | 0               |
| Morocco.....                                  | 13, 345         | 0               | 2, 536          | 0               | 369             | 0               | 18, 745           | 791             |
| Irish Free State.....                         | 12, 706         | 1, 282          | 10, 877         | 926             | 9, 933          | 945             | 3, 968            | 3, 285          |
| Iran <sup>4</sup> .....                       | 11, 918         | 1, 380          | 11, 543         | 1               | 10, 457         | 8               | 5, 500            | 9, 090          |
| Hungary.....                                  | 11, 715         | 1, 643          | 7, 194          | 1, 616          | 2, 318          | 1, 180          | 3, 359            | 13              |
| Brazil.....                                   | 11, 021         | 15, 412         | 15, 412         | 3, 907          | 3, 907          | 3               | 1, 242            | 927             |
| Peru.....                                     | 10, 760         | 1               | 9, 287          | 1               | 9, 213          | 3               | 12, 910           | 0               |
| Spain.....                                    | 9, 715          | 4, 918          | 2, 677          | 10, 643         | 2, 310          | 14, 945         | 3, 570            | 0               |
| Egypt.....                                    | 3, 997          | 127             | 3, 807          | 151             | 2, 469          | 2               | 0                 | 0               |
| Tunis.....                                    | 2, 982          | 1, 353          | 1, 172          | 491             | 651             | 600             | 0                 | 0               |
| Total.....                                    | 1, 873, 658     | 47, 929         | 1, 892, 943     | 33, 906         | 1, 970, 177     | 35, 541         | 1, 092, 506       | 36, 273         |
| PRINCIPAL IMPORT-<br>ING COUNTRIES            |                 |                 |                 |                 |                 |                 |                   |                 |
| France.....                                   | 53, 286         | 633, 028        | 56, 971         | 570, 223        | 39, 415         | 563, 167        | 53, 359           | 681, 853        |
| United Kingdom.....                           | 54, 037         | 473, 061        | 35, 771         | 600, 730        | 41, 911         | 612, 214        | 69, 502           | 623, 739        |
| Germany.....                                  | 24, 109         | 361, 447        | 30, 476         | 323, 575        | 14, 363         | 318, 666        | 14, 091           | 351, 778        |
| United States.....                            | 322             | 288, 346        | 274             | 158, 385        | 179             | 56, 535         | 19                | 178, 928        |
| Belgium.....                                  | 19, 091         | 135, 887        | 33, 121         | 137, 189        | 53, 352         | 147, 107        | 139, 737          | 213, 040        |
| Italy.....                                    | 7, 188          | 99, 134         | 6, 985          | 105, 091        | 3, 001          | 158, 804        | 5, 463            | 139, 335        |
| Japan.....                                    | 0               | 93, 489         | 0               | 189, 714        | 0               | 205, 178        | 0                 | 240, 640        |
| Union of Soviet So-<br>cialist Republics..... | 24, 024         | 46, 095         | 0               | 67, 747         | 0               | 57, 141         | 13                | 62, 910         |
| Czechoslovakia.....                           | 3, 381          | 35, 889         | 2, 422          | 40, 220         | 1, 375          | 32, 623         | 1, 916            | 32, 414         |
| Poland.....                                   | 1, 398          | 30, 255         | 261             | 35, 345         | 107             | 29, 321         | 212               | 37, 549         |
| Switzerland.....                              | 45              | 17, 404         | 643             | 13, 402         | 240             | 22, 016         | 320               | 19, 150         |
| Austria.....                                  | 973             | 16, 490         | 158             | 13, 127         | 77              | 16, 729         | 317               | 19, 554         |
| Canada.....                                   | 7, 307          | 13, 930         | 4, 770          | 10, 849         | 3, 712          | 8, 717          | 11, 258           | 13, 761         |
| Sweden.....                                   | 241             | 10, 326         | 217             | 11, 735         | 309             | 12, 431         | 419               | 12, 540         |
| Netherlands.....                              | 2, 530          | 10, 518         | 3, 062          | 16, 335         | 2, 990          | 16, 613         | 5, 746            | 17, 653         |
| Yugoslavia.....                               | 117             | 5, 559          | 75              | 6, 535          | 195             | 2, 895          | 189               | 4, 596          |
| Rumania.....                                  | 1, 287          | 64, 011         | 971             | 3, 204          | 393             | 1, 601          | 291               | 5, 215          |
| Denmark.....                                  | 355             | 2, 808          | 142             | 4, 041          | 169             | 4, 650          | 0                 | 4, 564          |
| Finland.....                                  | 3               | 2, 806          | 18              | 2, 269          | 0               | 3, 391          | 0                 | 1, 764          |
| Bulgaria.....                                 | 641             | 2, 063          | 300             | 2, 901          | 510             | 1, 929          | 882               | 2, 935          |
| Greece.....                                   | 601             | 1, 812          | 237             | 1, 833          | 129             | 1, 995          | 439               | 1, 807          |
| Norway.....                                   |                 |                 |                 |                 |                 |                 |                   |                 |
| Total.....                                    | 181, 236        | 2, 287, 557     | 170, 874        | 2, 326, 140     | 157, 427        | 2, 277, 651     | 304, 173          | 2, 715, 725     |

<sup>1</sup> Preliminary.<sup>2</sup> International Yearbook of Agricultural Statistics.<sup>3</sup> Does not include Manchuria after June 30, 1932.<sup>4</sup> Figures for Iran are for 12 months ended Mar. 21 of the year following year shown for 1925-29 average; beginning with 1931 figures are for the 12 months ended June 21 of the year following year shown.<sup>5</sup> Excess of reexports over imports.<sup>6</sup> 4-year average.

Bureau of Agricultural Economics; official sources except where otherwise noted.

"Wool" in this table includes washed, unwashed, scoured, pulled wool, slipe, also hair—camel's, mohair, angora goat, cashmere goat, and alpaca. The following items have been considered as not within this classification: Carded, combed, dyed wool, fleeces; sheep, lamb, and goat skins with hair on, mill waste, noils, and tops.

TABLE 370.—*Goats and mohair: Estimates of goats clipped, mohair produced, and average clip per goat (principal producing States), 1932-34*

| State                    | Goats clipped    |                  |                   | Mohair (including kid hair) produced |                     |                     | Average clip per goat clipped <sup>1</sup> |               |                   |
|--------------------------|------------------|------------------|-------------------|--------------------------------------|---------------------|---------------------|--|---------------|-------------------|
|                          | 1932             | 1933             | 1934 <sup>2</sup> | 1932                                 | 1933                | 1934 <sup>2</sup>   | 1932                                       | 1933          | 1934 <sup>2</sup> |
|                          | <i>Thousands</i> | <i>Thousands</i> | <i>Thousands</i>  | <i>1,000 pounds</i>                  | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>Pounds</i>                              | <i>Pounds</i> | <i>Pounds</i>     |
| Texas <sup>3</sup> ..... | 3,421            | 3,342            | 2,795             | 14,000                               | 13,700              | 10,342              | 4.2  | 4.1           | 3.7               |
| New Mexico.....          | 250              | 245              | 220               | 1,000                                | 1,020               | 925                 | 4.0  | 4.2           | 4.2               |
| Arizona.....             | 200              | 160              | 150               | 760                                  | 550                 | 510                 | 3.8  | 3.4           | 3.4               |
| California.....          | 37               | 32               | 35                | 130                                  | 112                 | 126                 | 3.5  | 3.5           | 3.6               |
| Oregon.....              | 115              | 87               | 87                | 460                                  | 350                 | 348                 | 4.0  | 4.0           | 4.0               |
| Missouri.....            | 66               | 71               | 72                | 145                                  | 163                 | 158                 | 2.2  | 2.3           | 2.2               |
| Total.....               | 4,089            | 3,937            | 3,359             | 16,495                               | 15,895              | 12,409              | 4.0  | 4.0           | 3.7               |

<sup>1</sup> In States where goats are clipped twice a year figures include both spring and fall clip.

<sup>2</sup> Preliminary.

<sup>3</sup> Most goats clipped twice a year. In Texas, kids are clipped in fall of year of birth. Figures include both goats and kids clipped.

Bureau of Agricultural Economics; estimates of Crop Reporting Board.

TABLE 371.—*Imported meat and meat food products, Federally inspected and passed, United States, 1925-34*

| Year ended June 30 | Chilled and frozen fresh meats |               | Canned and cured meats | Other meat products | Total weight  |
|--------------------|--------------------------------|---------------|------------------------|---------------------|---------------|
|                    | Beef                           | Other         |                        |                     |               |
|                    | <i>Pounds</i>                  | <i>Pounds</i> | <i>Pounds</i>          | <i>Pounds</i>       | <i>Pounds</i> |
| 1925.....          | 5,612,600                      | 11,827,557    | 12,857,043             | 2,877,640           | 33,174,840    |
| 1926.....          | 9,975,359                      | 12,402,230    | 19,258,401             | 3,144,968           | 44,780,958    |
| 1927.....          | 14,956,143                     | 22,508,681    | 43,714,607             | 5,454,741           | 86,634,172    |
| 1928.....          | 38,168,121                     | 18,880,547    | 63,189,480             | 12,102,635          | 132,340,783   |
| 1929.....          | 53,085,288                     | 15,704,658    | 89,511,863             | 11,563,215          | 109,865,014   |
| 1930.....          | 23,909,708                     | 6,783,637     | 98,128,169             | 8,065,195           | 136,886,709   |
| 1931.....          | 2,612,713                      | 1,314,170     | 23,854,583             | 5,651,509           | 33,423,975    |
| 1932.....          | 540,141                        | 1,402,900     | 25,465,159             | 3,530,632           | 30,938,832    |
| 1933.....          | 404,510                        | 942,227       | 33,254,553             | 2,644,628           | 37,245,918    |
| 1934.....          | 142,181                        | 225,996       | 42,842,437             | 886,371             | 44,096,985    |

Bureau of Animal Industry.

TABLE 372.—Meat and meat products: *International trade, average 1925-29, annual 1931-33*

| Country                       | Calendar year       |                     |                     |                     |                     |                     |                     |                     |
|-------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                               | Average 1925-29     |                     | 1931                |                     | 1932                |                     | 1933 <sup>1</sup>   |                     |
|                               | Exports             | Imports             | Exports             | Imports             | Exports             | Imports             | Exports             | Imports             |
| PRINCIPAL EXPORTING COUNTRIES | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> |
| Argentina.....                | 2,028,126           | 465                 | 1,544,619           | 348                 | 1,436,879           | 101                 | 1,429,967           | 100                 |
| United States.....            | 1,421,054           | 147,765             | 978,632             | 51,672              | 865,549             | 51,765              | 945,101             | 68,037              |
| Denmark.....                  | 640,468             | 26,692              | 1,040,604           | 18,221              | 1,025,304           | 12,691              | 797,034             | 10,047              |
| Netherlands.....              | 534,982             | 206,537             | 480,630             | 165,480             | 352,909             | 97,030              | 274,400             | 80,605              |
| New Zealand.....              | 442,571             | 1,102               | 519,769             | 689                 | 581,727             | 790                 | 651,235             | 658                 |
| Uruguay.....                  | 396,117             | 15                  | 268,654             | 0                   | 229,642             | 0                   | -----               | 0                   |
| Australia.....                | 380,162             | 6,691               | 350,546             | 7,411               | 446,075             | 1,910               | 434,847             | 2,118               |
| Canada.....                   | 144,720             | 27,305              | 34,147              | 13,962              | 62,440              | 10,037              | 99,153              | 13,279              |
| Brazil.....                   | 131,003             | 10,511              | 184,108             | 2,788               | 116,866             | 695                 | 136,931             | 918                 |
| Irish Free State.....         | 105,959             | 66,964              | 94,144              | 65,210              | 65,472              | 29,562              | 69,617              | 2,215               |
| Poland.....                   | 71,019              | 45,836              | 189,409             | 6,585               | 146,344             | 3,085               | 109,089             | 2,493               |
| Sweden.....                   | 61,961              | 46,886              | 91,086              | 47,287              | 67,750              | 46,371              | 64,992              | 53,741              |
| China.....                    | 48,376              | 3,672               | 48,167              | 3,436               | <sup>2</sup> 22,486 | <sup>3</sup> 4,558  | 24,302              | 3,959               |
| Chile.....                    | 40,829              | 4,206               | 29,892              | 2,776               | 34,426              | 204                 | 29,579              | -----               |
| Hungary.....                  | 33,182              | 6,733               | 20,116              | 6,276               | 13,270              | 5,336               | 17,996              | 5,662               |
| Yugoslavia.....               | 27,751              | 9,604               | 17,763              | 8,715               | 16,800              | 10,906              | 14,926              | 9,717               |
| Union of South Africa.....    | 24,581              | 15,118              | 23,648              | 19,053              | 17,224              | 6,877               | 24,155              | 11,750              |
| Rumania.....                  | 21,413              | 1,948               | 13,094              | 2,017               | 5,987               | 1,111               | -----               | -----               |
| Estonia.....                  | 6,888               | 1,455               | 9,500               | 514                 | 10,214              | 214                 | 10,465              | 172                 |
| Total.....                    | 5,561,162           | 629,505             | 5,938,528           | 422,438             | 5,517,364           | 282,743             | 5,133,799           | 265,411             |
| Total beef.....               | 2,874,958           | 294,287             | 2,182,744           | 213,473             | 1,937,285           | 138,988             | 1,723,900           | 135,780             |
| Total pork.....               | 2,285,198           | 150,691             | 2,338,657           | 78,487              | 2,236,653           | 41,023              | 2,032,514           | 17,783              |
| Total mutton and lamb.....    | 609,574             | 1,419               | 742,400             | 853                 | 781,282             | 530                 | 747,362             | 392                 |
| Total unclassified.....       | 791,432             | 183,168             | 674,667             | 129,625             | 562,144             | 102,202             | 630,023             | 111,476             |
| Total.....                    | 5,561,162           | 629,505             | 5,938,528           | 422,438             | 5,517,364           | 282,743             | 5,133,799           | 265,411             |
| PRINCIPAL IMPORTING COUNTRIES |                     |                     |                     |                     |                     |                     |                     |                     |
| United Kingdom.....           | 127,797             | 3,827,365           | 115,615             | 4,217,133           | 93,627              | 4,061,931           | 41,561              | 3,846,309           |
| Germany.....                  | 42,080              | 838,653             | 64,497              | 463,257             | 34,210              | 518,461             | 27,892              | 423,333             |
| France.....                   | 62,427              | 209,085             | 57,764              | 209,523             | 50,537              | 167,541             | 44,840              | 183,871             |
| Italy.....                    | 15,680              | 233,627             | 17,817              | 168,854             | 13,131              | 166,485             | 11,848              | 153,622             |
| Belgium.....                  | 60,122              | 213,736             | 33,429              | 204,809             | 19,728              | 152,068             | 16,935              | 150,295             |
| Cuba.....                     | 750                 | 180,592             | 356                 | 88,355              | 491                 | 54,416              | -----               | -----               |
| Austria.....                  | 8,495               | 124,462             | 11,577              | 92,526              | 4,007               | 41,260              | 4,207               | 28,852              |
| Czechoslovakia.....           | 9,837               | 101,778             | 6,333               | 80,489              | 2,987               | 58,466              | 2,399               | 44,423              |
| Japan.....                    | 115                 | 68,636              | 146                 | 76,479              | 296                 | 49,730              | 347                 | 24,608              |
| Mexico.....                   | 7,230               | 82,698              | 93                  | 58,351              | 61                  | 42,666              | 27                  | 39,120              |
| Norway.....                   | 3,107               | 36,970              | 2,503               | 21,501              | 5,318               | 16,488              | 6,849               | 11,074              |
| Spain.....                    | 6,116               | 31,148              | 5,367               | 32,240              | 5,343               | 39,643              | 5,056               | 51,254              |
| Switzerland.....              | 3,383               | 30,242              | 2,829               | 32,615              | 2,738               | 31,685              | 2,170               | 29,582              |
| Finland.....                  | 4,565               | 19,972              | 6,823               | 8,401               | 6,473               | 8,157               | 7,489               | 9,569               |
| Philippine Islands.....       | 0                   | 19,812              | 43                  | 17,529              | 1                   | 15,760              | -----               | -----               |
| British Malaya.....           | 2,336               | 15,306              | 1,335               | 11,906              | 1,087               | 9,063               | 980                 | 8,450               |
| British India.....            | 1,254               | 13,250              | 775                 | 15,047              | 685                 | 16,868              | 716                 | 15,338              |
| Peru.....                     | 590                 | 12,912              | 1,340               | 3,439               | 897                 | 2,942               | 1,275               | -----               |
| Algeria.....                  | 1,820               | 12,557              | 873                 | 17,314              | 1,658               | 14,211              | 2,363               | 14,322              |
| Egypt.....                    | 144                 | 7,603               | 98                  | 3,647               | 105                 | 3,061               | 83                  | 3,394               |
| Total.....                    | 360,848             | 6,170,404           | 329,613             | 5,913,475           | 243,380             | 5,470,932           | 177,057             | 5,017,716           |
| Total beef.....               | 126,843             | 2,696,113           | 110,878             | 2,197,605           | 76,978              | 877,949             | 41,180              | 1,816,045           |
| Total pork.....               | 32,980              | 2,176,466           | 38,046              | 2,334,735           | 20,668              | 2,293,717           | 42,697              | 1,951,154           |
| Total mutton and lamb.....    | 4,185               | 680,356             | 3,415               | 871,087             | 1,196               | 829,999             | 1,024               | 802,840             |
| Total unclassified.....       | 196,840             | 617,469             | 177,274             | 510,048             | 144,538             | 1,469,267           | 92,146              | 447,677             |
| Total.....                    | 360,848             | 6,170,404           | 329,613             | 5,913,475           | 243,380             | 5,470,932           | 177,057             | 5,017,716           |

<sup>1</sup> Preliminary.<sup>2</sup> Year ended June 30.<sup>3</sup> Does not include Manchuria after June 30, 1932.

Bureau of Agricultural Economics; official sources.

TABLE 373.—*Meat and meat food products prepared under Federal inspection, 1925-34*

| Year ended<br>June 30 | Pork<br>placed in<br>cure | Sausage         | Canned<br>meats | Lard            | Lard<br>com-<br>pounds<br>and<br>substi-<br>tutes | Oleo<br>prod-<br>ucts | Oleo-<br>marg-<br>arine | All other<br>products | Total           |
|-----------------------|---------------------------|-----------------|-----------------|-----------------|---|-----------------------|-------------------------|-----------------------|-----------------|
|                       | 1,000<br>pounds           | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds                                   | 1,000<br>pounds       | 1,000<br>pounds         | 1,000<br>pounds       | 1,000<br>pounds |
| 1925.....             | 3,176,714                 | 736,877         | 214,650         | 1,733,933       | 458,518   | 287,271               | 133,836                 | 2,170,278             | 8,912,077       |
| 1926.....             | 2,850,675                 | 771,741         | 214,166         | 1,598,754       | 543,913   | 275,636               | 148,331                 | 2,007,854             | 8,411,070       |
| 1927.....             | 2,920,206                 | 765,074         | 248,459         | 1,691,344       | 535,175   | 280,641               | 148,384                 | 1,971,827             | 8,561,110       |
| 1928.....             | 3,036,063                 | 778,311         | 255,379         | 1,846,796       | 472,839   | 237,506               | 152,085                 | 2,201,933             | 8,980,312       |
| 1929.....             | 2,992,598                 | 785,463         | 285,808         | 1,817,601       | 467,077   | 228,531               | 158,881                 | 2,210,436             | 8,946,697       |
| 1930.....             | 2,981,564                 | 783,629         | 303,094         | 1,807,144       | 433,495   | 223,859               | 159,413                 | 2,263,407             | 8,900,235       |
| 1931.....             | 2,851,938                 | 697,798         | 283,547         | 1,662,397       | 482,482   | 212,925               | 117,819                 | 2,135,789             | 8,444,695       |
| 1932.....             | 2,760,367                 | 663,644         | 240,832         | 1,715,349       | 411,935   | 187,465               | 86,717                  | 2,213,493             | 8,289,832       |
| 1933.....             | 2,782,341                 | 670,497         | 251,944         | 1,787,967       | 322,146   | 174,637               | 74,545                  | 2,192,960             | 8,287,037       |
| 1934.....             | 2,786,042                 | 760,434         | 361,502         | 1,682,523       | 323,494   | 170,117               | 87,333                  | 2,355,128             | 8,526,563       |

Bureau of Animal Industry.

The above figures do not represent production, as a product may be inspected more than once in course of further manufacture.

TABLE 374.—*Livestock: Number of animals slaughtered under Federal inspection and number of whole carcasses condemned,<sup>1</sup> 1925-34*

| Year ended<br>June 30 | Cattle         |                | Calves         |                | Sheep and<br>lambs |                | Goats          |                | Hogs           |                | Horses         |                | Total<br>slaughter |
|-----------------------|----------------|----------------|----------------|----------------|--------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------|
|                       | Total          | Condemned      | Total          | Condemned      | Total              | Condemned      | Total          | Condemned      | Total          | Condemned      | Total          | Condemned      |                    |
|                       | Thou-<br>sands | Thou-<br>sands | Thou-<br>sands | Thou-<br>sands | Thou-<br>sands     | Thou-<br>sands | Thou-<br>sands | Thou-<br>sands | Thou-<br>sands | Thou-<br>sands | Thou-<br>sands | Thou-<br>sands | Thou-<br>sands     |
| 1925.....             | 9,774          | 92.1           | 5,185          | 11.1           | 12,203             | 12.7           | 27             | 0.1            | 48,460         | 180.4          | 12             | 0.0            | 75,660             |
| 1926.....             | 10,098         | 103.6          | 5,312          | 11.9           | 12,354             | 14.5           | 43             | .1             | 40,443         | 143.0          | 40             | .1             | 68,289             |
| 1927.....             | 10,059         | 83.5           | 5,080          | 10.6           | 12,894             | 16.4           | 30             | .1             | 42,650         | 173.6          | 43             | .2             | 70,747             |
| 1928.....             | 9,040          | 69.4           | 4,774          | 9.9            | 12,934             | 15.4           | 20             | .1             | 48,347         | 154.2          | 107            | .3             | 75,273             |
| 1929.....             | 8,284          | 61.9           | 4,526          | 8.9            | 13,769             | 20.1           | 21             | .1             | 47,164         | 139.4          | 117            | .4             | 73,881             |
| 1930.....             | 8,281          | 59.5           | 4,491          | 9.5            | 15,307             | 22.9           | 22             | .1             | 46,689         | 135.4          | 136            | .5             | 74,926             |
| 1931.....             | 8,209          | 52.4           | 4,732          | 9.1            | 17,300             | 18.5           | 9              | .1             | 44,021         | 121.8          | 135            | .7             | 74,406             |
| 1932.....             | 7,975          | 53.8           | 4,605          | 10.2           | 18,660             | 17.6           | 8              | .0             | 45,852         | 139.9          | 100            | .3             | 77,200             |
| 1933.....             | 7,736          | 54.0           | 4,548          | 12.4           | 17,284             | 16.6           | 7              | .0             | 45,698         | 132.6          | 50             | .2             | 75,323             |
| 1934.....             | 9,653          | 81.6           | 5,673          | 17.8           | 16,429             | 22.3           | 7              | .0             | 45,773         | 153.2          | 33             | .3             | 77,569             |

<sup>1</sup> The numbers of condemned carcasses are expressed in thousands and tenths; that is, the last figure represents hundredths. These figures do not include parts of carcasses, data concerning which may be obtained from the Bureau of Animal Industry.

Bureau of Animal Industry.

TABLE 375.—*Hides, packer: Average price per pound at Chicago, 1925-34*

| Calendar year | Steers          |                |                |                      |                | Cows            |                 |              | Bulls  |         |
|---------------|-----------------|----------------|----------------|----------------------|----------------|-----------------|-----------------|--------------|--------|---------|
|               | Heavy<br>native | Heavy<br>Texas | Light<br>Texas | Butt<br>brand-<br>ed | Colo-<br>rados | Heavy<br>native | Light<br>native | Brand-<br>ed | Native | Branded |
|               | Cents           | Cents          | Cents          | Cents                | Cents          | Cents           | Cents           | Cents        | Cents  | Cents   |
| 1925.....     | 15.96           | 15.06          | 14.06          | 15.16                | 14.12          | 14.82           | 14.62           | 13.30        | 11.98  | 10.29   |
| 1926.....     | 14.08           | 13.38          | 12.67          | 13.34                | 12.82          | 12.71           | 13.11           | 12.05        | 9.98   | 8.50    |
| 1927.....     | 19.28           | 18.21          | 17.49          | 18.23                | 17.74          | 18.08           | 18.66           | 17.26        | 14.09  | 12.88   |
| 1928.....     | 23.85           | 22.91          | 22.26          | 22.95                | 22.26          | 22.96           | 22.63           | 21.79        | 17.64  | 16.62   |
| 1929.....     | 16.98           | 16.08          | 15.16          | 16.11                | 15.39          | 15.86           | 15.75           | 14.86        | 11.42  | 10.17   |
| 1930.....     | 13.87           | 13.76          | 12.55          | 13.73                | 13.18          | 11.78           | 11.71           | 11.19        | 8.30   | 7.30    |
| 1931.....     | 9.06            | 8.96           | 8.34           | 8.96                 | 8.48           | 8.04            | 8.43            | 7.76         | 5.53   | 4.78    |
| 1932.....     | 6.04            | 5.92           | 5.14           | 5.91                 | 5.47           | 5.17            | 5.63            | 5.20         | 3.86   | 3.19    |
| 1933.....     | 9.67            | 9.66           | 9.09           | 9.66                 | 9.18           | 8.89            | 9.28            | 8.78         | 6.93   | 6.18    |
| 1934.....     | 9.92            | 9.60           | 8.60           | 9.60                 | 9.10           | 8.70            | 8.72            | 8.25         | 6.45   | 5.69    |

Bureau of Agricultural Economics. Compiled from annual reports of the Chicago Board of Trade.

TABLE 376.—*Hides, country: Average price per pound at Chicago, 1925-34*

| Calendar year | Ex-<br>tremes | Heavy<br>steers | Heavy<br>cows | No. 1<br>buffs | No. 2<br>buffs | Bulls        | Country<br>packer<br>brands | Country<br>brands | No. 1<br>calf-<br>skins | No. 1<br>kip-<br>skins |
|---------------|---------------|-----------------|---------------|----------------|----------------|--------------|-----------------------------|-------------------|-------------------------|------------------------|
|               | <i>Cents</i>  | <i>Cents</i>    | <i>Cents</i>  | <i>Cents</i>   | <i>Cents</i>   | <i>Cents</i> | <i>Cents</i>                | <i>Cents</i>      | <i>Cents</i>            | <i>Cents</i>           |
| 1925.....     | 14.41         | 12.94           | 11.84         | 12.26          | 11.25          | 9.46         | 12.52                       | 10.54             | 21.88                   | 18.12                  |
| 1926.....     | 13.46         | 11.63           | 9.54          | 10.70          | 9.70           | 8.03         | 10.52                       | 9.00              | 18.02                   | 16.12                  |
| 1927.....     | 18.60         | 16.02           | 14.85         | 16.26          | 15.26          | 11.49        | 15.54                       | 13.89             | 20.47                   | 19.96                  |
| 1928.....     | 22.04         | 18.53           | 18.05         | 19.71          | 18.71          | 14.88        | 19.18                       | 17.38             | 27.84                   | 25.23                  |
| 1929.....     | 14.98         | 12.09           | 11.55         | 12.82          | 11.82          | 8.92         | 11.88                       | 10.80             | 20.72                   | 18.72                  |
| 1930.....     | 11.18         | 8.50            | 8.40          | 9.14           | 8.14           | 5.90         | 9.49                        | 7.73              | 17.43                   | 15.92                  |
| 1931.....     | 7.77          | 6.02            | 5.61          | 6.32           | 5.32           | 3.99         | 6.70                        | 5.05              | 11.81                   | 10.42                  |
| 1932.....     | 4.88          | 3.78            | 3.40          | 4.15           | 3.15           | 2.39         | 3.32                        | 2.85              | 6.38                    | 6.28                   |
| 1933.....     | 8.13          | 6.32            | 5.08          | 7.23           | 6.23           | 4.64         | 5.50                        | 5.12              | 12.58                   | 11.72                  |
| 1934.....     | 8.05          | 6.02            | 5.67          | 6.83           | 5.83           | 4.17         | 5.50                        | 5.13              | 11.86                   | 10.06                  |

Bureau of Agricultural Economics. Compiled from annual reports of the Chicago Board of Trade.  
Data for earlier years in 1928 Yearbook, table 435.

TABLE 377.—*Horses and mules: Number and value on farms, Jan. 1, and yearly weighted average price received by producers, United States, 1910-35*

| Year                    | Horses                   |                          |                          |  | Mules                    |                          |                          |  |
|-------------------------|--------------------------|--------------------------|--------------------------|--|--------------------------|--------------------------|--------------------------|--|
|                         | Num-<br>ber <sup>1</sup> | Farm value               |                          | Weighted<br>yearly<br>price per<br>head <sup>2</sup> | Num-<br>ber <sup>1</sup> | Farm value               |                          | Weighted<br>yearly<br>price per<br>head <sup>2</sup> |
|                         |                          | Per<br>head <sup>1</sup> | Total                    |  |                          | Per<br>head <sup>1</sup> | Total                    |  |
|                         | <i>Thou-<br/>sands</i>   | <i>Dollars</i>           | <i>1,000<br/>dollars</i> | <i>Dollars</i>                                       | <i>Thou-<br/>sands</i>   | <i>Dollars</i>           | <i>1,000<br/>dollars</i> | <i>Dollars</i>                                       |
| 1910.....               | 19,833                   | 108.03                   | 2,142,524                | 138.20   | 4,210                    | 120.20                   | 506,049                  | .....  |
| 1911.....               | 20,277                   | 111.46                   | 2,259,981                | 130.10   | 4,323                    | 125.92                   | 544,359                  | .....  |
| 1912.....               | 20,509                   | 105.94                   | 2,172,694                | 108.30   | 4,362                    | 120.51                   | 525,657                  | .....  |
| 1913.....               | 20,567                   | 110.77                   | 2,278,222                | 130.60   | 4,380                    | 124.31                   | 545,245                  | .....  |
| 1914.....               | 20,962                   | 109.32                   | 2,291,638                | 124.50   | 4,449                    | 123.85                   | 551,017                  | .....  |
| 1915.....               | 21,195                   | 103.33                   | 2,190,102                | 123.40   | 4,479                    | 112.36                   | 503,271                  | .....  |
| 1916.....               | 21,159                   | 101.60                   | 2,149,786                | 126.10   | 4,593                    | 113.83                   | 522,834                  | .....  |
| 1917.....               | 21,210                   | 102.89                   | 2,182,307                | 127.40   | 4,723                    | 118.15                   | 558,006                  | .....  |
| 1918.....               | 21,555                   | 104.24                   | 2,246,970                | 116.60   | 4,873                    | 128.81                   | 627,679                  | .....  |
| 1919.....               | 21,482                   | 98.45                    | 2,114,897                | 111.90   | 4,954                    | 135.83                   | 672,922                  | .....  |
| 1920.....               | 20,092                   | 96.48                    | 1,938,447                | 91.50  | 5,656                    | 148.25                   | 838,630                  | .....  |
| 1921.....               | 19,366                   | 84.54                    | 1,637,181                | 76.30  | 5,772                    | 117.37                   | 677,475                  | .....  |
| 1922.....               | 18,760                   | 71.05                    | 1,332,822                | 75.00  | 5,827                    | 88.99                    | 518,558                  | .....  |
| 1923.....               | 18,123                   | 70.51                    | 1,277,873                | 69.30  | 5,895                    | 86.86                    | 512,067                  | .....  |
| 1924.....               | 17,365                   | 65.42                    | 1,135,967                | 70.70  | 5,908                    | 85.89                    | 507,435                  | 87.60  |
| 1925.....               | 16,640                   | 64.28                    | 1,069,654                | 72.30  | 5,918                    | 82.91                    | 490,668                  | 92.40  |
| 1926.....               | 16,067                   | 65.32                    | 1,049,442                | 68.80  | 5,903                    | 81.51                    | 481,153                  | 84.10  |
| 1927.....               | 15,368                   | 63.74                    | 979,509                  | 72.50  | 5,801                    | 74.50                    | 432,181                  | 87.70  |
| 1928.....               | 14,768                   | 66.68                    | 984,763                  | 72.00  | 5,647                    | 79.79                    | 450,585                  | 88.60  |
| 1929.....               | 14,203                   | 69.63                    | 988,953                  | 69.20  | 5,496                    | 82.39                    | 452,825                  | 86.20  |
| 1930.....               | 13,684                   | 69.86                    | 955,964                  | 59.20  | 5,366                    | 83.76                    | 449,480                  | 70.20  |
| 1931.....               | 13,169                   | 60.42                    | 795,725                  | 52.40  | 5,226                    | 69.19                    | 361,562                  | 60.70  |
| 1932.....               | 12,621                   | 53.20                    | 671,457                  | 55.10  | 5,120                    | 60.56                    | 310,058                  | 62.10  |
| 1933.....               | 12,203                   | 53.75                    | 655,911                  | 70.10  | 5,038                    | 60.18                    | 303,066                  | 81.70  |
| 1934.....               | 11,963                   | 66.30                    | 793,155                  | 77.90  | 4,925                    | 81.54                    | 401,595                  | 94.40  |
| 1935 <sup>3</sup> ..... | 11,827                   | 76.18                    | 901,038                  | .....  | 4,795                    | 98.21                    | 470,900                  | .....  |

<sup>1</sup> As reported for Jan. 1.

<sup>2</sup> Revised: Annual averages of prices, by States, weighted by number of animals coming 4 years of age in computing United States averages.

<sup>3</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 378.—Horses and mules: <sup>1</sup> Number on farms and farm value per head, by States, Jan. 1, 1933–35

| State and division      | Horses         |                |                   |                                  |        |        | Mules          |                |                   |                                  |        |        |
|-------------------------|----------------|----------------|-------------------|----------------------------------|--------|--------|----------------|----------------|-------------------|----------------------------------|--------|--------|
|                         | Number         |                |                   | Farm value per head <sup>2</sup> |        |        | Number         |                |                   | Farm value per head <sup>2</sup> |        |        |
|                         | 1933           | 1934           | 1935 <sup>3</sup> | 1933                             | 1934   | 1935   | 1933           | 1934           | 1935 <sup>3</sup> | 1933                             | 1934   | 1935   |
|                         | Thou-<br>sands | Thou-<br>sands | Thou-<br>sands    | Dol.                             | Dol.   | Dol.   | Thou-<br>sands | Thou-<br>sands | Thou-<br>sands    | Dol.                             | Dol.   | Dol.   |
| Maine.....              | 51             | 48             | 47                | 104.00                           | 116.00 | 135.00 | —              | —              | —                 | —                                | —      | —      |
| New Hampshire.....      | 17             | 16             | 16                | 80.00                            | 95.00  | 106.00 | —              | —              | —                 | —                                | —      | —      |
| Vermont.....            | 47             | 45             | 45                | 80.00                            | 107.00 | 131.00 | —              | —              | —                 | —                                | —      | —      |
| Massachusetts.....      | 22             | 21             | 20                | 101.00                           | 106.00 | 133.00 | —              | —              | —                 | —                                | —      | —      |
| Rhode Island.....       | 4              | 4              | 4                 | 90.00                            | 95.00  | 125.00 | —              | —              | —                 | —                                | —      | —      |
| Connecticut.....        | 19             | 18             | 17                | 82.00                            | 102.00 | 131.00 | —              | —              | —                 | —                                | —      | —      |
| New York.....           | 294            | 285            | 282               | 87.00                            | 108.00 | 120.00 | 6              | 6              | 6                 | 91.00                            | 98.00  | 110.00 |
| New Jersey.....         | 83             | 82             | 82                | 86.00                            | 115.00 | 125.00 | 2              | 2              | 2                 | 90.00                            | 108.00 | 125.00 |
| Pennsylvania.....       | 285            | 279            | 282               | 95.00                            | 109.00 | 123.00 | 51             | 51             | 51                | 98.00                            | 112.00 | 117.00 |
| North Atlantic.....     | 772            | 749            | 745               | 95.92                            | 108.86 | 123.15 | 59             | 59             | 59                | 97.29                            | 110.63 | 116.86 |
| Ohio.....               | 460            | 451            | 451               | 87.00                            | 100.00 | 111.00 | 33             | 32             | 32                | 88.00                            | 95.00  | 107.00 |
| Indiana.....            | 412            | 404            | 400               | 72.00                            | 82.00  | 98.00  | 82             | 84             | 81                | 77.00                            | 87.00  | 105.00 |
| Illinois.....           | 742            | 727            | 705               | 60.00                            | 70.00  | 85.00  | 126            | 122            | 116               | 67.00                            | 80.00  | 96.00  |
| Michigan.....           | 366            | 362            | 368               | 91.00                            | 105.00 | 114.00 | 6              | 6              | 6                 | 91.00                            | 107.00 | 113.00 |
| Wisconsin.....          | 512            | 507            | 516               | 77.00                            | 91.00  | 100.00 | 7              | 7              | 7                 | 74.00                            | 89.00  | 101.00 |
| East North Central..... | 2,492          | 2,451          | 2,438             | 75.01                            | 87.06  | 99.38  | 254            | 251            | 242               | 73.76                            | 85.06  | 101.22 |
| Minnesota.....          | 760            | 745            | 738               | 57.00                            | 69.00  | 78.00  | 15             | 15             | 15                | 60.00                            | 73.00  | 86.00  |
| Iowa.....               | 955            | 936            | 927               | 59.00                            | 73.00  | 83.00  | 79             | 76             | 70                | 64.00                            | 79.00  | 89.00  |
| Missouri.....           | 551            | 551            | 551               | 45.00                            | 59.00  | 70.00  | 288            | 274            | 255               | 60.00                            | 76.00  | 89.00  |
| North Dakota.....       | 532            | 521            | 510               | 46.00                            | 55.00  | 54.00  | 8              | 8              | 8                 | 45.00                            | 57.00  | 62.00  |
| South Dakota.....       | 552            | 524            | 498               | 39.00                            | 48.00  | 55.00  | 17             | 15             | 15                | 47.00                            | 60.00  | 64.00  |
| Nebraska.....           | 676            | 665            | 645               | 46.00                            | 58.00  | 64.00  | 88             | 81             | 73                | 56.00                            | 72.00  | 80.00  |
| Kansas.....             | 651            | 644            | 638               | 41.00                            | 53.00  | 62.00  | 146            | 127            | 110               | 52.00                            | 69.00  | 78.00  |
| West North Central..... | 4,677          | 4,586          | 4,507             | 48.64                            | 60.71  | 68.52  | 641            | 596            | 546               | 57.65                            | 73.83  | 84.63  |
| North Central.....      | 7,169          | 7,037          | 6,945             | 57.81                            | 69.89  | 79.36  | 895            | 847            | 788               | 62.22                            | 77.16  | 89.72  |
| Delaware.....           | 16             | 15             | 15                | 64.00                            | 78.00  | 88.00  | 9              | 9              | 9                 | 86.00                            | 90.00  | 117.00 |
| Maryland.....           | 89             | 85             | 85                | 63.00                            | 81.00  | 99.00  | 28             | 28             | 28                | 89.00                            | 103.00 | 122.00 |
| Virginia.....           | 178            | 167            | 160               | 68.00                            | 80.00  | 98.00  | 90             | 88             | 87                | 83.00                            | 98.00  | 118.00 |
| West Virginia.....      | 103            | 101            | 100               | 74.00                            | 85.00  | 100.00 | 12             | 12             | 11                | 73.00                            | 81.00  | 93.00  |
| North Carolina.....     | 75             | 73             | 73                | 67.00                            | 85.00  | 103.00 | 265            | 268            | 271               | 89.00                            | 116.00 | 140.00 |
| South Carolina.....     | 23             | 22             | 21                | 63.00                            | 82.00  | 99.00  | 165            | 165            | 168               | 77.00                            | 117.00 | 137.00 |
| Georgia.....            | 33             | 32             | 31                | 60.00                            | 78.00  | 92.00  | 326            | 333            | 333               | 69.00                            | 112.00 | 135.00 |
| Florida.....            | 18             | 18             | 19                | 69.00                            | 68.00  | 79.00  | 42             | 42             | 40                | 74.00                            | 99.00  | 117.00 |
| South Atlantic.....     | 535            | 513            | 504               | 66.53                            | 81.35  | 97.89  | 937            | 945            | 947               | 78.36                            | 111.18 | 133.28 |
| Kentucky.....           | 207            | 203            | 205               | 47.00                            | 59.00  | 79.00  | 257            | 254            | 256               | 59.00                            | 72.00  | 100.00 |
| Tennessee.....          | 146            | 143            | 150               | 49.00                            | 63.00  | 81.00  | 315            | 309            | 306               | 64.00                            | 83.00  | 104.00 |
| Alabama.....            | 55             | 53             | 54                | 45.00                            | 64.00  | 73.00  | 322            | 325            | 319               | 65.00                            | 91.00  | 112.00 |
| Mississippi.....        | 86             | 85             | 90                | 39.00                            | 52.00  | 64.00  | 347            | 344            | 337               | 55.00                            | 78.00  | 96.00  |
| Arkansas.....           | 116            | 116            | 118               | 35.00                            | 47.00  | 58.00  | 319            | 306            | 300               | 51.00                            | 68.00  | 80.00  |
| Louisiana.....          | 103            | 99             | 100               | 32.00                            | 40.00  | 45.00  | 180            | 178            | 171               | 56.00                            | 70.00  | 83.00  |
| Oklahoma.....           | 439            | 431            | 435               | 33.00                            | 53.00  | 57.00  | 270            | 251            | 238               | 45.00                            | 70.00  | 78.00  |
| Texas.....              | 727            | 727            | 712               | 31.00                            | 46.00  | 51.00  | 980            | 960            | 931               | 47.00                            | 68.00  | 80.00  |
| South Central.....      | 1,879          | 1,857          | 1,864             | 35.65                            | 50.76  | 59.41  | 2,990          | 2,925          | 2,858             | 53.89                            | 73.76  | 89.80  |
| Montana.....            | 388            | 380            | 352               | 24.00                            | 34.00  | 38.00  | 8              | 8              | 8                 | 29.00                            | 40.00  | 52.00  |
| Idaho.....              | 186            | 182            | 184               | 35.00                            | 47.00  | 62.00  | 7              | 7              | 7                 | 36.00                            | 54.00  | 74.00  |
| Wyoming.....            | 157            | 149            | 142               | 26.00                            | 36.00  | 44.00  | 4              | 4              | 4                 | 41.00                            | 54.00  | 62.00  |
| Colorado.....           | 318            | 312            | 312               | 31.00                            | 41.00  | 51.00  | 26             | 24             | 22                | 39.00                            | 51.00  | 62.00  |
| New Mexico.....         | 121            | 114            | 108               | 25.00                            | 39.00  | 40.00  | 21             | 19             | 18                | 37.00                            | 54.00  | 66.00  |
| Arizona.....            | 72             | 73             | 73                | 32.00                            | 41.00  | 45.00  | 12             | 12             | 12                | 39.00                            | 53.00  | 63.00  |
| Utah.....               | 83             | 81             | 81                | 46.00                            | 59.00  | 64.00  | 3              | 3              | 3                 | 40.00                            | 50.00  | 65.00  |
| Nevada.....             | 34             | 34             | 34                | 35.00                            | 47.00  | 56.00  | 3              | 3              | 3                 | 41.00                            | 53.00  | 63.00  |
| Washington.....         | 155            | 155            | 161               | 48.00                            | 63.00  | 77.00  | 20             | 20             | 19                | 54.00                            | 71.00  | 85.00  |
| Oregon.....             | 154            | 154            | 154               | 47.00                            | 55.00  | 69.00  | 14             | 13             | 13                | 50.00                            | 58.00  | 75.00  |
| California.....         | 180            | 173            | 168               | 54.00                            | 70.00  | 79.00  | 37             | 36             | 34                | 58.00                            | 73.00  | 87.00  |
| Western.....            | 1,848          | 1,807          | 1,769             | 35.07                            | 46.39  | 55.45  | 155            | 149            | 143               | 45.72                            | 59.71  | 72.92  |
| United States.....      | 12,203         | 11,963         | 11,827            | 53.75                            | 66.30  | 76.18  | 5,036          | 4,925          | 4,795             | 60.18                            | 81.54  | 98.21  |

<sup>1</sup> Including colts.<sup>2</sup> Sum of total value of subgroups (classified by age), divided by total number and rounded to nearest dollar for States. Division and United States averages not rounded.<sup>3</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

## DAIRY AND POULTRY STATISTICS

TABLE 379.—*Milk cows: Number and farm value per head in the United States, 1880-1935*

| Year                    | Milk cows on farms  |   | Year                    | Milk cows on farms  |   | Year                    | Milk cows on farms  |   |
|-------------------------|---------------------|---|-------------------------|---------------------|---|-------------------------|---------------------|---|
|                         | Number <sup>1</sup> | Farm value per head Jan. 1 <sup>2</sup> |                         | Number <sup>1</sup> | Farm value per head Jan. 1 <sup>2</sup> |                         | Number <sup>1</sup> | Farm value per head Jan. 1 <sup>2</sup> |
|                         | Thou-<br>sands      | Dollars                                 |                         | Thou-<br>sands      | Dollars                                 |                         | Thou-<br>sands      | Dollars                                 |
| 1880 <sup>3</sup> ..... | 12,443              |   | 1899.....               | 15,990              | 29.66                                   | 1918.....               | 21,021              | 67.37                                   |
| 1880.....               | 12,027              | 23.27                                   | 1900 <sup>3</sup> ..... | 17,156              |   | 1919.....               | 21,219              | 74.68                                   |
| 1881.....               | 12,369              | 23.95                                   | 1900.....               | 15,253              | 30.18                                   | 1920 <sup>3</sup> ..... | 19,675              |   |
| 1882.....               | 12,612              | 25.89                                   | 1901.....               | 15,521              | 28.65                                   | 1920.....               | 21,455              | 81.51                                   |
| 1883.....               | 13,126              | 30.21                                   | 1902.....               | 15,787              | 27.91                                   | 1921.....               | 21,440              | 61.20                                   |
| 1884.....               | 13,501              | 31.37                                   | 1903.....               | 16,073              | 28.85                                   | 1922.....               | 21,822              | 48.69                                   |
| 1885.....               | 13,905              | 29.70                                   | 1904.....               | 16,459              | 27.90                                   | 1923.....               | 22,099              | 48.68                                   |
| 1886.....               | 14,235              | 27.40                                   | 1905.....               | 16,842              | 28.21                                   | 1924.....               | 22,288              | 49.94                                   |
| 1887.....               | 14,522              | 26.08                                   | 1906.....               | 17,277              | 28.12                                   | 1925 <sup>3</sup> ..... | 20,900              |   |
| 1888.....               | 14,856              | 24.65                                   | 1907.....               | 17,650              | 29.60                                   | 1925.....               | 22,505              | 48.38                                   |
| 1889.....               | 15,299              | 23.94                                   | 1908.....               | 17,937              | 29.29                                   | 1926.....               | 22,311              | 54.73                                   |
| 1890 <sup>3</sup> ..... | 16,512              |   | 1909.....               | 18,154              | 30.90                                   | 1927.....               | 22,159              | 59.24                                   |
| 1890.....               | 15,953              | 22.14                                   | 1910 <sup>3</sup> ..... | 20,625              |   | 1928.....               | 22,129              | 73.47                                   |
| 1891.....               | 16,020              | 21.62                                   | 1910.....               | 18,206              | 33.70                                   | 1929.....               | 22,330              | 83.99                                   |
| 1892.....               | 16,416              | 21.40                                   | 1911.....               | 18,244              | 38.17                                   | 1930 <sup>3</sup> ..... | 21,124              |   |
| 1893.....               | 16,424              | 21.75                                   | 1912.....               | 18,312              | 37.62                                   | 1930.....               | 22,910              | 82.80                                   |
| 1894.....               | 16,487              | 21.77                                   | 1913.....               | 18,526              | 42.99                                   | 1931.....               | 23,576              | 57.10                                   |
| 1895.....               | 16,505              | 21.97                                   | 1914.....               | 18,930              | 51.51                                   | 1932.....               | 24,475              | 39.57                                   |
| 1896.....               | 16,138              | 22.55                                   | 1915.....               | 19,526              | 52.84                                   | 1933.....               | 25,285              | 29.26                                   |
| 1897.....               | 15,942              | 23.16                                   | 1916.....               | 20,064              | 51.49                                   | 1934.....               | 26,185              | 27.11                                   |
| 1898.....               | 15,841              | 27.45                                   | 1917.....               | 20,541              | 56.95                                   | 1935 <sup>4</sup> ..... | 25,100              | 30.38                                   |

<sup>1</sup> Prior to 1900, estimates for each 10-year period represent an index of annual changes applied to the census as a base on first report after census data were available. Figures for 1900 to 1919 are tentatively revised estimates of the Bureau of Agricultural Economics for numbers on Jan. 1. Figures from 1920 to 1931 are revised estimates made in 1932, based upon study of 1930 census report. Figures for 1900-1935 relate to "cows and heifers 2 years old and over Jan. 1, kept for milk."

<sup>2</sup> Values for 1880-99 relate to "milk cows." Data for 1900-1925 are an old series of values of "milk cows" adjusted to relate to "milk cows and heifers, 2 years old and over" on basis of relationship between the 2 series from 1926 to 1928. Conversion factor was 0.955 (base is old series). Data for 1926-35 are values relating to "milk cows and heifers 2 years old and over."

and 1930, "number of cows milked in 1924 and 1929." Census dates were June 1 from 1880 to 1900; Apr. 15, 1910; Jan. 1, 1920 and 1925; Apr. 1, 1930.

<sup>4</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.



TABLE 380.—*Milk cows, heifers, and heifer calves: Number on farms, by States, Jan. 1, 1933-35*

| State and division      | Cows and heifers, 2 years old and over, kept for milk |                 |                   |                |              |                   | Heifers 1 to 2 years old being kept for milk cows |                 |                   | Heifer calves under 1 year being kept for milk cows |                 |                   |
|-------------------------|---|-----------------|-------------------|----------------|--------------|-------------------|---|-----------------|-------------------|---|-----------------|-------------------|
|                         | Number  |                 |                   | Value per head |              |                   |   |                 |                   |   |                 |                   |
|                         | 1933  | 1934            | 1935 <sup>1</sup> | 1933           | 1934         | 1935 <sup>1</sup> | 1933  | 1934            | 1935 <sup>1</sup> | 1933  | 1934            | 1935 <sup>1</sup> |
|                         | Thous-<br>sands                                       | Thous-<br>sands | Thous-<br>sands   | Dol-<br>lars   | Dol-<br>lars | Dol-<br>lars      | Thous-<br>sands                                   | Thous-<br>sands | Thous-<br>sands   | Thous-<br>sands                                     | Thous-<br>sands | Thous-<br>sands   |
| Maine.....              | 149   | 151             | 147               | 36.00          | 33.00        | 38.00             | 40  | 40              | 38                | 41  | 42              | 39                |
| New Hampshire.....      | 81  | 82              | 82                | 46.00          | 41.00        | 48.00             | 19  | 19              | 18                | 19  | 19              | 17                |
| Vermont.....            | 303   | 288             | 278               | 40.00          | 38.00        | 43.00             | 58  | 53              | 49                | 62  | 53              | 49                |
| Massachusetts.....      | 129   | 133             | 136               | 64.00          | 64.00        | 68.00             | 19  | 19              | 19                | 21  | 21              | 21                |
| Rhode Island.....       | 21  | 22              | 21                | 68.00          | 68.00        | 70.00             | 3   | 3               | 3                 | 4   | 4               | 3                 |
| Connecticut.....        | 114   | 115             | 115               | 60.00          | 62.00        | 71.00             | 18  | 18              | 17                | 19  | 19              | 18                |
| New York.....           | 1,438   | 1,431           | 1,359             | 49.00          | 51.00        | 55.00             | 222   | 234             | 237               | 240   | 244             | 234               |
| New Jersey.....         | 122   | 127             | 133               | 63.00          | 76.00        | 84.00             | 17  | 19              | 20                | 22  | 22              | 22                |
| Pennsylvania.....       | 904   | 922             | 931               | 42.00          | 44.00        | 45.00             | 153   | 155             | 146               | 161   | 168             | 155               |
| North Atlantic.....     | 3,261   | 3,271           | 3,200             | 47.18          | 48.80        | 52.53             | 549   | 560             | 547               | 589   | 592             | 558               |
| Ohio.....               | 966   | 995             | 985               | 32.00          | 29.00        | 31.00             | 178   | 181             | 174               | 187   | 195             | 175               |
| Indiana.....            | 774   | 814             | 795               | 29.00          | 25.00        | 31.00             | 136   | 142             | 130               | 150   | 146             | 134               |
| Illinois.....           | 1,122   | 1,178           | 1,178             | 32.00          | 29.00        | 34.00             | 219   | 209             | 189               | 235   | 232             | 209               |
| Michigan.....           | 867   | 902             | 893               | 33.00          | 30.00        | 35.00             | 157   | 160             | 147               | 165   | 169             | 151               |
| Wisconsin.....          | 2,175   | 2,212           | 2,124             | 30.00          | 28.00        | 33.00             | 395   | 387             | 356               | 400   | 392             | 349               |
| East North Central..... | 5,904   | 6,101           | 5,975             | 31.02          | 28.25        | 32.90             | 1,085   | 1,079           | 996               | 1,137   | 1,134           | 1,018             |
| Minnesota.....          | 1,776   | 1,865           | 1,734             | 25.00          | 23.00        | 26.00             | 339   | 346             | 289               | 367   | 378             | 314               |
| Iowa.....               | 1,503   | 1,693           | 1,645             | 29.00          | 27.00        | 28.00             | 288   | 288             | 255               | 293   | 319             | 280               |
| Missouri.....           | 1,061   | 1,072           | 922               | 23.00          | 19.00        | 22.00             | 190   | 188             | 153               | 210   | 225             | 187               |
| North Dakota.....       | 667   | 701             | 596               | 25.00          | 20.00        | 23.00             | 136   | 144             | 84                | 150   | 165             | 99                |
| South Dakota.....       | 650   | 675             | 587               | 24.00          | 20.00        | 22.00             | 150   | 150             | 111               | 175   | 175             | 115               |
| Nebraska.....           | 735   | 772             | 712               | 27.00          | 26.00        | 27.00             | 131   | 135             | 119               | 138   | 150             | 124               |
| Kansas.....             | 868   | 929             | 855               | 25.00          | 22.00        | 24.00             | 147   | 147             | 119               | 165   | 175             | 152               |
| West North Central..... | 7,250   | 7,607           | 6,951             | 25.65          | 22.91        | 25.18             | 1,384   | 1,398           | 1,130             | 1,498   | 1,587           | 1,271             |
| North Central.....      | 13,154  | 13,708          | 12,926            | 28.06          | 25.29        | 28.75             | 2,469   | 2,477           | 2,126             | 2,635   | 2,721           | 2,289             |
| Delaware.....           | 36  | 36              | 36                | 36.00          | 41.00        | 41.00             | 5   | 4               | 5                 | 4   | 4               | 4                 |
| Maryland.....           | 188   | 190             | 192               | 35.00          | 36.00        | 39.00             | 26  | 27              | 26                | 28  | 27              | 26                |
| Virginia.....           | 402   | 406             | 398               | 27.00          | 26.00        | 28.00             | 49  | 49              | 46                | 55  | 50              | 47                |
| West Virginia.....      | 227   | 238             | 239               | 29.00          | 27.00        | 27.00             | 33  | 34              | 30                | 38  | 38              | 34                |
| North Carolina.....     | 328   | 337             | 343               | 28.00          | 27.00        | 29.00             | 66  | 69              | 68                | 75  | 75              | 73                |
| South Carolina.....     | 154   | 156             | 156               | 27.00          | 28.00        | 28.00             | 29  | 28              | 29                | 32  | 31              | 32                |
| Georgia.....            | 356   | 375             | 382               | 19.00          | 20.00        | 20.00             | 87  | 90              | 87                | 92  | 94              | 91                |
| Florida.....            | 93  | 98              | 103               | 29.00          | 30.00        | 32.00             | 18  | 17              | 16                | 18  | 17              | 15                |
| South Atlantic.....     | 1,784   | 1,834           | 1,849             | 26.97          | 26.80        | 28.02             | 313   | 318             | 307               | 342   | 336             | 322               |
| Kentucky.....           | 544   | 554             | 554               | 23.00          | 21.00        | 24.00             | 70  | 73              | 72                | 87  | 88              | 88                |
| Tennessee.....          | 527   | 543             | 521               | 21.00          | 19.00        | 21.00             | 86  | 90              | 85                | 100   | 100             | 93                |
| Alabama.....            | 413   | 430             | 434               | 18.00          | 18.00        | 19.00             | 99  | 101             | 99                | 131   | 134             | 132               |
| Mississippi.....        | 526   | 552             | 558               | 15.00          | 15.00        | 16.00             | 76  | 78              | 74                | 95  | 96              | 94                |
| Arkansas.....           | 454   | 477             | 463               | 18.00          | 15.00        | 15.00             | 95  | 96              | 90                | 110   | 110             | 107               |
| Louisiana.....          | 270   | 286             | 297               | 21.00          | 23.00        | 24.00             | 54  | 56              | 58                | 60  | 64              | 66                |
| Oklahoma.....           | 766   | 797             | 733               | 20.00          | 18.00        | 18.00             | 154   | 159             | 124               | 186   | 205             | 155               |
| Texas.....              | 1,591   | 1,461           | 1,388             | 20.00          | 18.00        | 19.00             | 223   | 245             | 196               | 269   | 272             | 218               |
| South Central.....      | 4,891   | 5,100           | 4,948             | 19.60          | 17.79        | 19.21             | 857   | 896             | 798               | 1,028   | 1,069           | 952               |
| Montana.....            | 201   | 211             | 194               | 32.00          | 26.00        | 26.00             | 46  | 50              | 44                | 47  | 51              | 45                |
| Idaho.....              | 200   | 208             | 196               | 31.00          | 25.00        | 28.00             | 57  | 58              | 57                | 59  | 60              | 60                |
| Wyoming.....            | 73  | 75              | 64                | 31.00          | 27.00        | 28.00             | 15  | 18              | 15                | 18  | 21              | 16                |
| Colorado.....           | 274   | 290             | 264               | 25.00          | 22.00        | 25.00             | 65  | 72              | 62                | 75  | 82              | 69                |
| New Mexico.....         | 72  | 75              | 65                | 25.00          | 25.00        | 27.00             | 17  | 18              | 16                | 20  | 22              | 17                |
| Arizona.....            | 45  | 46              | 44                | 39.00          | 39.00        | 40.00             | 12  | 12              | 11                | 13  | 13              | 12                |
| Utah.....               | 111   | 117             | 104               | 32.00          | 25.00        | 26.00             | 27  | 28              | 26                | 28  | 29              | 26                |
| Nevada.....             | 21  | 22              | 21                | 38.00          | 38.00        | 37.00             | 6   | 6               | 6                 | 7   | 8               | 7                 |
| Washington.....         | 312   | 318             | 324               | 36.00          | 27.00        | 37.00             | 70  | 70              | 70                | 74  | 72              | 72                |
| Oregon.....             | 255   | 267             | 270               | 31.00          | 23.00        | 26.00             | 58  | 60              | 59                | 60  | 61              | 60                |
| California.....         | 631   | 643             | 631               | 38.00          | 35.00        | 45.00             | 142   | 145             | 142               | 147   | 150             | 148               |
| Western.....            | 2,195   | 2,272           | 2,177             | 33.15          | 28.04        | 34.92             | 515   | 537             | 508               | 548   | 569             | 532               |
| United States.....      | 25,285  | 26,185          | 25,100            | 29.26          | 27.11        | 30.38             | 4,703   | 4,788           | 4,286             | 5,142   | 5,287           | 4,653             |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; estimates of Crop Reporting Board.

Revisions by States, 1920-27, except for heifer calves, are published in February 1932, Crops and Markets.

TABLE 381.—*Heifers and heifer calves: Number on farms, United States, Jan. 1, 1920-35*

| Year      | Heifers 1 to 2 years old being kept for milk cows | Heifer calves under 1 year being kept for milk cows | Year      | Heifers 1 to 2 years old being kept for milk cows | Heifer calves under 1 year being kept for milk cows | Year                    | Heifers 1 to 2 years old being kept for milk cows | Heifer calves under 1 year being kept for milk cows |
|-----------|---|---|-----------|---|---|-------------------------|---|---|
|           | Thousands   | Thousands   |           | Thousands   | Thousands   |                         | Thousands   | Thousands   |
| 1920..... | 4,420   | 4,371   | 1925..... | 4,171   | 4,271   | 1930.....               | 4,700   | 5,005   |
| 1921..... | 4,164   | 4,179   | 1926..... | 4,045   | 4,276   | 1931.....               | 4,775   | 4,887   |
| 1922..... | 3,972   | 4,357   | 1927..... | 4,048   | 4,383   | 1932.....               | 4,635   | 4,953   |
| 1923..... | 4,155   | 4,339   | 1928..... | 4,158   | 4,606   | 1933.....               | 4,703   | 5,142   |
| 1924..... | 4,143   | 4,378   | 1929..... | 4,404   | 4,911   | 1934.....               | 4,788   | 5,237   |
|           |   |   |           |   |   | 1935 <sup>1</sup> ..... | 4,286   | 4,653   |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 382.—*Milk cows: Average price<sup>1</sup> per head received by producers, United States, 1925-34*

| Year     | Jan. 15 | Feb. 15 | Mar. 15 | Apr. 15 | May 15 | June 15 | July 15 | Aug. 15 | Sept. 15 | Oct. 15 | Nov. 15 | Dec. 15 | Average |
|----------|---------|---------|---------|---------|--------|---------|---------|---------|----------|---------|---------|---------|---------|
|          | Dol.    | Dol.    | Dol.    | Dol.    | Dol.   | Dol.    | Dol.    | Dol.    | Dol.     | Dol.    | Dol.    | Dol.    | Dol.    |
| 1925.... | 54.80   | 54.80   | 56.20   | 56.80   | 57.90  | 57.80   | 58.00   | 58.30   | 58.70    | 60.20   | 60.70   | 60.40   | 57.90   |
| 1926.... | 62.10   | 63.40   | 63.20   | 65.60   | 66.60  | 66.70   | 66.70   | 65.40   | 66.10    | 66.30   | 66.90   | 66.70   | 65.50   |
| 1927.... | 66.80   | 68.20   | 70.20   | 72.00   | 72.40  | 74.20   | 74.20   | 74.20   | 76.10    | 78.60   | 81.10   | 82.40   | 74.20   |
| 1928.... | 83.10   | 86.30   | 88.00   | 88.60   | 89.00  | 89.90   | 90.40   | 90.40   | 92.60    | 92.90   | 93.00   | 92.90   | 89.80   |
| 1929.... | 91.50   | 91.80   | 92.80   | 93.60   | 94.90  | 95.30   | 96.30   | 95.30   | 95.60    | 95.10   | 94.50   | 92.60   | 94.10   |
| 1930.... | 89.20   | 85.00   | 81.00   | 80.70   | 79.50  | 77.60   | 71.80   | 65.90   | 66.20    | 66.40   | 64.70   | 62.00   | 74.20   |
| 1931.... | 59.90   | 56.90   | 56.30   | 56.50   | 54.40  | 51.50   | 49.50   | 47.80   | 46.70    | 45.60   | 46.00   | 44.20   | 51.30   |
| 1932.... | 42.10   | 40.60   | 39.40   | 39.30   | 37.30  | 36.10   | 36.40   | 36.20   | 35.90    | 34.40   | 33.20   | 32.40   | 37.00   |
| 1933.... | 31.70   | 31.30   | 31.30   | 32.00   | 34.40  | 35.30   | 36.40   | 34.80   | 34.30    | 33.50   | 32.10   | 31.20   | 33.20   |
| 1934.... | 31.00   | 32.50   | 33.00   | 33.30   | 33.30  | 32.50   | 32.20   | 30.60   | 32.70    | 32.90   | 33.10   | 33.60   | 32.60   |

<sup>1</sup> As reported by country dealers.

Bureau of Agricultural Economics.

Monthly prices, by States, weighted by number of milk cows Jan. 1, to obtain a price for the United States; yearly price is a simple average of 12 months. Data for earlier years (on a slightly different basis) in 1925 Yearbook, table 451.

TABLE 383.—*Average production, feed cost, and value per cow, of butterfat and milk, classified on butterfat basis, 12-month records completed in 1933 by dairy herd-improvement associations, United States*

| Cows (number) | Production |           |         | Feed costs                  |         |         | Value of product over feed cost | Return for \$1 spent for feed | Feed cost per pound of butterfat | Feed cost per 100 pounds of milk |
|---------------|------------|-----------|---------|-----------------------------|---------|---------|---------------------------------|-------------------------------|----------------------------------|----------------------------------|
|               | Milk       | Butterfat | Value   | Roughage, including pasture | Grain   | Total   |                                 |                               |                                  |                                  |
|               | Pounds     | Pounds    | Dollars | Dollars                     | Dollars | Dollars | Dollars                         | Dollars                       | Dollars                          | Dollars                          |
| 29.....       | 0          | 0         | 0       | 32                          | 8       | 40      | —40                             | 0.00                          | 0.00                             | 0.00                             |
| 61.....       | 388        | 16        | 12      | 15                          | 5       | 20      | —8                              | 1.60                          | 1.25                             | 5.15                             |
| 392.....      | 1,330      | 54        | 29      | 21                          | 7       | 28      | 1                               | 1.04                          | .52                              | 2.11                             |
| 1,542.....    | 2,649      | 106       | 50      | 24                          | 10      | 34      | 16                              | 1.47                          | .32                              | 1.28                             |
| 5,946.....    | 3,954      | 155       | 66      | 25                          | 12      | 37      | 29                              | 1.78                          | .24                              | .94                              |
| 16,897.....   | 5,227      | 203       | 84      | 28                          | 15      | 43      | 41                              | 1.95                          | .21                              | .82                              |
| 31,290.....   | 6,465      | 252       | 104     | 29                          | 18      | 47      | 57                              | 2.21                          | .19                              | .73                              |
| 37,689.....   | 7,567      | 300       | 125     | 30                          | 21      | 51      | 74                              | 2.45                          | .17                              | .67                              |
| 31,838.....   | 8,060      | 348       | 145     | 31                          | 24      | 55      | 90                              | 2.64                          | .16                              | .64                              |
| 19,789.....   | 9,762      | 397       | 165     | 32                          | 27      | 59      | 107                             | 2.81                          | .15                              | .60                              |
| 10,116.....   | 10,897     | 446       | 188     | 33                          | 30      | 63      | 125                             | 2.98                          | .14                              | .58                              |
| 4,482.....    | 12,090     | 496       | 215     | 34                          | 33      | 67      | 148                             | 3.21                          | .14                              | .55                              |
| 1,795.....    | 13,481     | 546       | 241     | 37                          | 36      | 73      | 168                             | 3.30                          | .13                              | .54                              |
| 654.....      | 14,771     | 596       | 281     | 41                          | 41      | 82      | 199                             | 3.43                          | .14                              | .56                              |
| 285.....      | 15,932     | 646       | 286     | 41                          | 45      | 86      | 200                             | 3.33                          | .13                              | .54                              |
| 118.....      | 17,461     | 694       | 290     | 45                          | 48      | 93      | 208                             | 3.22                          | .13                              | .53                              |
| 44.....       | 17,727     | 747       | 400     | 50                          | 53      | 103     | 297                             | 3.88                          | .14                              | .58                              |
| 32.....       | 20,176     | 795       | 375     | 51                          | 55      | 106     | 269                             | 3.54                          | .13                              | .53                              |
| 13.....       | 21,794     | 842       | 352     | 57                          | 57      | 114     | 238                             | 3.09                          | .14                              | .52                              |
| 3.....        | 21,182     | 896       | 474     | 71                          | 73      | 144     | 330                             | 3.29                          | .16                              | .68                              |
| 3.....        | 20,242     | 950       | 400     | 75                          | 77      | 155     | 245                             | 2.58                          | .16                              | .77                              |
| 1.....        | 28,654     | 1,030     | 839     | 56                          | 49      | 105     | 734                             | 7.99                          | .10                              | .39                              |
| Average.....  | 7,849      | 313       | 131     | 30                          | 22      | 52      | 79                              | 2.52                          | .17                              | .66                              |

Bureau of Dairy Industry.

TABLE 384.—*Dairy herd-improvement and bull associations, United States, 1906-34*

| July 1    | Dairy herd-improvement associations | Cooperative dairy bull associations | July 1    | Dairy herd-improvement associations | Cooperative dairy bull associations | January 1 | Dairy herd-improvement associations | Cooperative dairy bull associations |
|-----------|-------------------------------------|-------------------------------------|-----------|-------------------------------------|-------------------------------------|-----------|-------------------------------------|-------------------------------------|
|           | Number                              | Number                              |           | Number                              | Number                              |           | Number                              | Number                              |
| 1906..... | 1                                   |                                     | 1915..... | 211                                 | 15                                  | 1925..... | 732                                 | 220                                 |
| 1907..... | 4                                   |                                     | 1916..... | 340                                 | 24                                  | 1926..... | 777                                 | 225                                 |
| 1908..... | 6                                   | 3                                   | 1917..... | 459                                 | 36                                  | 1927..... | 837                                 | 248                                 |
| 1909..... | 25                                  | 8                                   | 1918..... | 585                                 | 44                                  | 1928..... | 947                                 | 235                                 |
| 1910..... | 40                                  | 9                                   | 1919..... | 855                                 | 75                                  | 1929..... | 1,090                               | 330                                 |
| 1911..... | 64                                  | 11                                  | 1920..... | 468                                 | 123                                 | 1930..... | 1,143                               | 296                                 |
| 1912..... | 82                                  | 11                                  | 1921..... | 462                                 | 158                                 | 1931..... | 1,112                               | 359                                 |
| 1913..... | 100                                 | 12                                  | 1922..... | 513                                 | 190                                 | 1932..... | 1,005                               | 403                                 |
| 1914..... | 163                                 | 14                                  | 1923..... | 627                                 | 218                                 | 1933..... | 881                                 | 342                                 |
|           |                                     |                                     |           |                                     |                                     | 1934..... | 793                                 | 351                                 |

Bureau of Dairy Industry.

TABLE 385.—*Purebred dairy cattle: Number registered each year, by breeds, United States, 1925-34*

| Year      | Ayrshire |        |        | Guernsey |        |        | Holstein-Friesian |        |         | Jersey |        |        |
|-----------|----------|--------|--------|----------|--------|--------|-------------------|--------|---------|--------|--------|--------|
|           | Bulls    | Cows   | Total  | Bulls    | Cows   | Total  | Bulls             | Cows   | Total   | Bulls  | Cows   | Total  |
|           | Number   | Number | Number | Number   | Number | Number | Number            | Number | Number  | Number | Number | Number |
| 1925..... | 1,561    | 5,972  | 7,533  | 11,299   | 20,742 | 32,041 | 26,935            | 82,659 | 109,594 | 12,131 | 41,725 | 53,856 |
| 1926..... | 1,720    | 6,142  | 7,862  | 12,392   | 22,298 | 34,690 | 28,117            | 82,971 | 111,088 | 12,897 | 42,915 | 55,752 |
| 1927..... | 1,847    | 6,534  | 8,401  | 12,777   | 22,094 | 35,471 | 28,817            | 81,146 | 109,963 | 15,666 | 48,411 | 64,077 |
| 1928..... | 2,274    | 7,837  | 10,111 | 14,363   | 24,664 | 39,027 | 35,512            | 88,214 | 121,726 | 19,393 | 54,516 | 73,909 |
| 1929..... | 2,586    | 8,853  | 11,419 | 14,661   | 26,288 | 40,949 | 35,438            | 89,927 | 125,865 | 19,250 | 52,431 | 71,661 |
| 1930..... | 2,050    | 8,159  | 10,209 | 15,810   | 28,662 | 44,472 | 29,242            | 75,901 | 105,143 | 14,350 | 43,767 | 58,117 |
| 1931..... | 1,552    | 7,324  | 8,876  | 12,880   | 27,964 | 40,844 | 21,811            | 70,535 | 92,346  | 10,262 | 38,211 | 48,473 |
| 1932..... | 1,317    | 6,306  | 7,623  | 19,962   | 25,817 | 35,779 | 13,834            | 54,481 | 68,315  | 7,673  | 33,551 | 41,229 |
| 1933..... | 1,430    | 7,542  | 8,972  | 7,185    | 22,809 | 29,994 | 15,821            | 83,002 | 98,523  | 6,217  | 26,239 | 32,456 |
| 1934..... | 2,530    | 14,906 | 17,436 | 7,708    | 27,054 | 34,762 | 17,283            | 82,935 | 100,218 | 6,170  | 32,408 | 38,578 |

¹ Year ended Apr. 1.

Bureau of Dairy Industry; obtained from registry associations.

See 1930 Yearbook, table 441, for data for earlier years.

TABLE 386.—*Cattle: Tuberculin testing under accredited-herd and area plans, 1925-34*

| Year ended June 30 | Cattle tested        |            |            |                | Modified accredited counties¹ | Herds accredited² | Herds passed¹ test² | Herds under supervision³ |
|--------------------|----------------------|------------|------------|----------------|-------------------------------|-------------------|---------------------|--------------------------|
|                    | Accredited-herd plan | Area plan  | Total      | Reactors found |                               |                   |                     |                          |
|                    | Number               | Number     | Number     | Number         | Percent                       | Number            | Number              | Number                   |
| 1925.....          | 2,008,526            | 4,991,502  | 7,000,028  | 214,491        | 3.1                           | 51                | 24,110              | 392,740                  |
| 1926.....          | 1,989,048            | 6,661,732  | 8,650,780  | 323,084        | 3.7                           | 109               | 24,009              | 382,674                  |
| 1927.....          | 2,522,791            | 7,177,385  | 9,700,176  | 285,361        | 2.9                           | 149               | 34,084              | 229,086                  |
| 1928.....          | 2,589,844            | 8,691,646  | 11,281,490 | 262,113        | 2.3                           | 180               | 38,880              | 427,595                  |
| 1929.....          | 2,853,633            | 8,830,087  | 11,683,720 | 206,764        | 1.8                           | 213               | 1,639               | 249,420                  |
| 1930.....          | 2,953,350            | 9,892,521  | 12,845,871 | 216,232        | 1.7                           | 236               | 11,863              | 227,921                  |
| 1931.....          | 3,086,403            | 10,695,870 | 13,782,273 | 203,778        | 1.5                           | 247               | 26,259              | 350,735                  |
| 1932.....          | 3,131,426            | 10,812,131 | 13,943,557 | 254,785        | 1.9                           | 220               | 18,049              | 362,984                  |
| 1933.....          | 2,980,526            | 10,093,368 | 13,073,894 | 255,096        | 2.1                           | 183               | 19,701              | 337,730                  |
| 1934.....          | 2,826,257            | 12,293,506 | 15,119,763 | 232,368        | 1.5                           | 189               | 31,460              | 342,262                  |

¹ Modified accredited counties are those in which tuberculosis does not exist among more than 0.5 percent of the cattle, as determined by official tuberculin testing, and from which all reactors to the test have been removed.

² The figures in these columns represent net increases at the close of each year.

³ Represents decrease from figures for previous year.

Bureau of Animal Industry.

Current data on tuberculosis-eradication work, including progress by States and counties, may be obtained from Bureau of Animal Industry. Data for earlier years in 1928 Yearbook, table 448.

TABLE 387.—*Milk cows and production of milk: Estimated number of producing cows, yield per cow, and production of milk by States, 1932-34*

| State and division      | Milk cows on farms <sup>1</sup> |                |                   | Milk production per cow <sup>2</sup> |        |                   | Total production of milk on farms <sup>2</sup> |                   |                   |
|-------------------------|---------------------------------|----------------|-------------------|--------------------------------------|--------|-------------------|--|-------------------|-------------------|
|                         | 1932                            | 1933           | 1934 <sup>3</sup> | 1932                                 | 1933   | 1934 <sup>3</sup> | 1932   | 1933              | 1934 <sup>3</sup> |
|                         | Thou-<br>sands                  | Thou-<br>sands | Thou-<br>sands    | Pounds                               | Pounds | Pounds            | Million<br>pounds                              | Million<br>pounds | Million<br>pounds |
| Maine.....              | 140                             | 142            | 142               | 4,620                                | 4,430  | 4,420             | 647  | 629               | 628               |
| New Hampshire.....      | 76                              | 77             | 78                | 4,900                                | 4,750  | 4,700             | 372  | 366               | 367               |
| Vermont.....            | 275                             | 281            | 264               | 4,800                                | 4,660  | 4,720             | 1,320  | 1,309             | 1,246             |
| Massachusetts.....      | 126                             | 123            | 128               | 5,710                                | 5,730  | 5,525             | 719  | 705               | 707               |
| Rhode Island.....       | 21                              | 21             | 21                | 6,300                                | 6,300  | 6,050             | 132  | 132               | 127               |
| Connecticut.....        | 110                             | 109            | 110               | 5,660                                | 5,600  | 5,400             | 623  | 610               | 594               |
| New York.....           | 1,370                           | 1,378          | 1,336             | 5,357                                | 5,295  | 5,351             | 7,340  | 7,297             | 7,149             |
| New Jersey.....         | 116                             | 119            | 125               | 5,900                                | 5,900  | 5,980             | 684  | 702               | 748               |
| Pennsylvania.....       | 877                             | 897            | 908               | 4,980                                | 4,930  | 4,950             | 4,367  | 4,422             | 4,495             |
| North Atlantic.....     | 3,111                           | 3,147          | 3,112             | 5,209                                | 5,139  | 5,161             | 16,204   | 16,172            | 16,061            |
| Ohio.....               | 912                             | 942            | 952               | 4,470                                | 4,340  | 4,300             | 4,077  | 4,088             | 4,094             |
| Indiana.....            | 731                             | 762            | 775               | 4,160                                | 4,000  | 3,820             | 3,041  | 3,048             | 2,960             |
| Illinois.....           | 1,054                           | 1,100          | 1,130             | 4,510                                | 4,470  | 4,380             | 4,754  | 4,917             | 4,949             |
| Michigan.....           | 822                             | 850            | 863               | 5,100                                | 4,950  | 4,800             | 4,192  | 4,208             | 4,142             |
| Wisconsin.....          | 2,074                           | 2,106          | 2,085             | 5,300                                | 5,140  | 5,100             | 10,992   | 10,835            | 10,634            |
| East North Central..... | 5,593                           | 5,760          | 5,805             | 4,837                                | 4,702  | 4,613             | 27,056   | 27,086            | 26,770            |
| Minnesota.....          | 1,627                           | 1,715          | 1,715             | 4,800                                | 4,720  | 4,300             | 7,810  | 8,095             | 7,374             |
| Iowa.....               | 1,406                           | 1,455          | 1,490             | 4,300                                | 4,300  | 4,100             | 6,046  | 6,256             | 6,109             |
| Missouri.....           | 1,012                           | 1,041          | 1,003             | 3,540                                | 3,380  | 3,280             | 3,582  | 3,519             | 3,290             |
| North Dakota.....       | 602                             | 640            | 620               | 3,750                                | 3,560  | 3,175             | 2,258  | 2,278             | 1,968             |
| South Dakota.....       | 560                             | 600            | 580               | 3,580                                | 3,530  | 2,900             | 2,005  | 2,118             | 1,682             |
| Nebraska.....           | 672                             | 715            | 720               | 4,100                                | 4,200  | 3,880             | 2,755  | 3,003             | 2,794             |
| Kansas.....             | 817                             | 845            | 853               | 4,000                                | 3,950  | 3,630             | 3,268  | 3,338             | 3,096             |
| West North Central..... | 6,696                           | 7,011          | 6,981             | 4,140                                | 4,080  | 3,769             | 27,724   | 28,607            | 26,313            |
| Delaware.....           | 33                              | 34             | 34                | 3,950                                | 3,900  | 3,780             | 130  | 133               | 129               |
| Maryland.....           | 180                             | 182            | 184               | 4,250                                | 4,200  | 4,120             | 765  | 764               | 758               |
| Virginia.....           | 381                             | 386            | 385               | 3,360                                | 3,160  | 3,180             | 1,280  | 1,220             | 1,224             |
| West Virginia.....      | 210                             | 220            | 227               | 3,560                                | 3,310  | 3,250             | 748  | 728               | 738               |
| North Carolina.....     | 304                             | 317            | 322               | 3,660                                | 3,450  | 3,430             | 1,113  | 1,094             | 1,104             |
| South Carolina.....     | 141                             | 147            | 149               | 3,450                                | 3,380  | 3,250             | 486  | 497               | 484               |
| Georgia.....            | 328                             | 343            | 356               | 3,080                                | 2,960  | 2,820             | 1,010  | 1,015             | 1,004             |
| Florida.....            | 86                              | 89             | 94                | 2,770                                | 2,770  | 2,650             | 238  | 247               | 249               |
| South Atlantic.....     | 1,663                           | 1,718          | 1,751             | 3,470                                | 3,317  | 3,250             | 5,770  | 5,698             | 5,690             |
| Kentucky.....           | 522                             | 536            | 541               | 3,440                                | 3,370  | 3,220             | 1,796  | 1,806             | 1,742             |
| Tennessee.....          | 496                             | 516            | 513               | 3,240                                | 3,080  | 2,930             | 1,607  | 1,589             | 1,503             |
| Alabama.....            | 384                             | 405            | 412               | 3,000                                | 2,780  | 2,700             | 1,152  | 1,118             | 1,112             |
| Mississippi.....        | 484                             | 513            | 525               | 2,740                                | 2,500  | 2,300             | 1,326  | 1,282             | 1,208             |
| Arkansas.....           | 406                             | 433            | 438               | 3,000                                | 2,750  | 2,480             | 1,218  | 1,191             | 1,086             |
| Louisiana.....          | 244                             | 254            | 270               | 2,230                                | 2,070  | 1,900             | 544  | 526               | 513               |
| Oklahoma.....           | 710                             | 749            | 735               | 2,450                                | 2,250  | 2,950             | 2,450  | 2,434             | 2,168             |
| Texas.....              | 1,261                           | 1,334          | 1,335             | 3,180                                | 2,930  | 2,800             | 4,010  | 3,909             | 3,738             |
| South Central.....      | 4,507                           | 4,740          | 4,769             | 3,129                                | 2,923  | 2,741             | 14,103   | 13,855            | 13,070            |
| Montana.....            | 183                             | 192            | 191               | 3,990                                | 3,850  | 3,750             | 730  | 739               | 716               |
| Idaho.....              | 186                             | 193            | 193               | 5,440                                | 5,280  | 5,020             | 1,012  | 1,019             | 969               |
| Wyoming.....            | 69                              | 70             | 68                | 3,790                                | 3,840  | 3,680             | 262  | 269               | 250               |
| Colorado.....           | 251                             | 262            | 262               | 4,000                                | 4,000  | 3,790             | 1,004  | 1,048             | 993               |
| New Mexico.....         | 87                              | 68             | 68                | 3,300                                | 3,150  | 2,980             | 221  | 214               | 201               |
| Arizona.....            | 42                              | 44             | 43                | 4,640                                | 4,740  | 4,900             | 195  | 209               | 211               |
| Utah.....               | 107                             | 108            | 106               | 5,300                                | 5,280  | 4,980             | 587  | 570               | 528               |
| Nevada.....             | 21                              | 21             | 21                | 4,880                                | 4,730  | 4,550             | 102  | 99                | 96                |
| Washington.....         | 295                             | 304            | 309               | 5,680                                | 5,350  | 5,700             | 1,676  | 1,626             | 1,761             |
| Oregon.....             | 247                             | 252            | 260               | 5,200                                | 4,850  | 5,050             | 1,284  | 1,222             | 1,313             |
| California.....         | 599                             | 599            | 609               | 6,600                                | 6,470  | 6,550             | 3,953  | 3,876             | 3,989             |
| Western.....            | 2,067                           | 2,113          | 2,130             | 5,325                                | 5,154  | 5,177             | 11,006   | 10,891            | 11,027            |
| United States.....      | 23,637                          | 24,489         | 24,548            | 4,309                                | 4,178  | 4,030             | 101,863  | 102,309           | 98,940            |

<sup>1</sup> Average number of milk cows on farms during year, excluding heifers not fresh.<sup>2</sup> Excluding milk spilled or wasted on farms and milk sucked by calves.<sup>3</sup> Preliminary.

Bureau of Agricultural Economics; estimates of Division of Crop and Livestock Estimates.

TABLE 388.—*Milk and butterfat produced and milk used for each purpose on farms, 1934*

| State and division      | Milk cows on farms <sup>1</sup> |       | Estimated production per milk cow during year <sup>2</sup> | Percentage of butterfat in milk produced | Total production on farms <sup>2</sup> |             | Disposition of milk                                 |                                 |                          |   |                                     |  |             |  |
|-------------------------|---------------------------------|-------|--|--|--|-------------|---|---------------------------------|--------------------------|---|-------------------------------------|--|-------------|--|
|                         |                                 |       |  |  |  |             | Used as whole milk or cream on farms where produced | Used for making butter on farms | Whole milk fed to calves | Milk skimmed or separated for sale of butterfat | Retailled by producers <sup>3</sup> | Milk sold at wholesale sale <sup>4</sup> |             |  |
|                         | Thousands                       | Lb.   | Lb.  | Per cent                                 | Million lb.                            | Million lb. | Million lb.   | Million lb.                     | Million lb.              | Million lb.                                     | Million lb.                         | Million lb.                              | Million lb. |  |
| Maine.....              | 142                             | 4,420 | 181  | 4.1                                      | 628                                    | 26          | 72  | 156                             | 13                       | 79  | 106                                 | 202                                      |             |  |
| New Hampshire.....      | 73                              | 4,700 | 183  | 3.9                                      | 367                                    | 14          | 28  | 83                              | 8                        | 9   | 44                                  | 245                                      |             |  |
| Vermont.....            | 264                             | 4,720 | 191  | 4.05                                     | 1,246                                  | 50          | 63  | 37                              | 29                       | 160   | 58                                  | 89                                       |             |  |
| Massachusetts.....      | 128                             | 5,525 | 210  | 3.8                                      | 707                                    | 27          | 51  | 14                              | 15                       | 9   | 135                                 | 453                                      |             |  |
| Rhode Island.....       | 21                              | 6,050 | 233  | 3.85                                     | 127                                    | 5           | 6   | 1                               | 3                        | -----   | 12                                  | 105                                      |             |  |
| Connecticut.....        | 110                             | 5,400 | 205  | 3.8                                      | 594                                    | 23          | 41  | 11                              | 17                       | 4   | 116                                 | 405                                      |             |  |
| New York.....           | 1,336                           | 5,351 | 194  | 3.63                                     | 7,149                                  | 259         | 385   | 332                             | 250                      | 168   | 565                                 | 5,449                                    |             |  |
| New Jersey.....         | 125                             | 5,980 | 220  | 3.68                                     | 748                                    | 28          | 47  | 12                              | 15                       | 2   | 198                                 | 474                                      |             |  |
| Pennsylvania.....       | 908                             | 4,950 | 188  | 3.8                                      | 4,495                                  | 171         | 413   | 349                             | 108                      | 187   | 740                                 | 2,698                                    |             |  |
| North Atlantic.....     | 3,112                           | 5,161 | 193.8  | 3.75                                     | 16,061                                 | 603         | 1,106   | 945                             | 458                      | 618   | 1,974                               | 10,960                                   |             |  |
| Ohio.....               | 952                             | 4,300 | 176  | 4.1                                      | 4,094                                  | 168         | 556   | 314                             | 119                      | 1,145   | 391                                 | 1,569                                    |             |  |
| Indiana.....            | 775                             | 3,820 | 159  | 4.15                                     | 2,960                                  | 123         | 411   | 158                             | 71                       | 1,146   | 213                                 | 961                                      |             |  |
| Illinois.....           | 1,130                           | 4,380 | 160  | 3.8                                      | 4,949                                  | 188         | 564   | 363                             | 124                      | 1,534   | 415                                 | 1,947                                    |             |  |
| Michigan.....           | 863                             | 4,800 | 182  | 3.8                                      | 4,142                                  | 157         | 397   | 285                             | 145                      | 1,400   | 308                                 | 1,609                                    |             |  |
| Wisconsin.....          | 2,085                           | 5,100 | 189  | 3.7                                      | 10,634                                 | 394         | 541   | 65                              | 308                      | 2,697   | 216                                 | 6,807                                    |             |  |
| East North Central..... | 5,805                           | 4,613 | 177.4  | 3.85                                     | 26,779                                 | 1,030       | 2,469   | 1,185                           | 767                      | 7,922   | 1,543                               | 12,893                                   |             |  |
| Minnesota.....          | 1,715                           | 4,300 | 161  | 3.75                                     | 7,374                                  | 276         | 566   | 206                             | 206                      | 5,511   | 190                                 | 695                                      |             |  |
| Iowa.....               | 1,490                           | 4,100 | 156  | 3.8                                      | 6,109                                  | 232         | 607   | 297                             | 177                      | 4,423   | 167                                 | 438                                      |             |  |
| Missouri.....           | 1,003                           | 3,280 | 138  | 4.2                                      | 3,290                                  | 138         | 565   | 444                             | 89                       | 1,598   | 195                                 | 399                                      |             |  |
| North Dakota.....       | 620                             | 3,175 | 119  | 3.75                                     | 1,968                                  | 74          | 238   | 321                             | 67                       | 1,254   | 58                                  | 30                                       |             |  |
| South Dakota.....       | 580                             | 2,900 | 110  | 3.8                                      | 1,682                                  | 64          | 224   | 194                             | 59                       | 1,114   | 59                                  | 32                                       |             |  |
| Nebraska.....           | 720                             | 3,880 | 147  | 3.8                                      | 2,794                                  | 106         | 347   | 316                             | 98                       | 1,708   | 124                                 | 201                                      |             |  |
| Kansas.....             | 853                             | 3,630 | 142  | 3.9                                      | 3,096                                  | 121         | 402   | 287                             | 111                      | 1,778   | 185                                 | 333                                      |             |  |
| West North Central..... | 6,981                           | 3,769 | 144.8  | 3.84                                     | 26,313                                 | 1,011       | 2,949   | 2,065                           | 807                      | 17,386  | 978                                 | 2,128                                    |             |  |
| Delaware.....           | 34                              | 3,780 | 147  | 3.9                                      | 129                                    | 5           | 16  | 9                               | 3                        | 2   | 19                                  | 80                                       |             |  |
| Maryland.....           | 184                             | 4,120 | 163  | 3.95                                     | 758                                    | 30          | 96  | 73                              | 15                       | 14  | 102                                 | 458                                      |             |  |
| Virginia.....           | 385                             | 3,180 | 130  | 4.1                                      | 1,224                                  | 50          | 286   | 433                             | 37                       | 130   | 110                                 | 228                                      |             |  |
| West Virginia.....      | 227                             | 3,250 | 136  | 4.2                                      | 738                                    | 31          | 189   | 250                             | 25                       | 94  | 109                                 | 71                                       |             |  |
| North Carolina.....     | 322                             | 3,430 | 147  | 4.3                                      | 1,104                                  | 47          | 349   | 491                             | 15                       | 60  | 92                                  | 97                                       |             |  |
| South Carolina.....     | 149                             | 3,250 | 143  | 4.4                                      | 484                                    | 21          | 148   | 225                             | 6                        | 20  | 55                                  | 30                                       |             |  |
| Georgia.....            | 356                             | 2,820 | 124  | 4.4                                      | 1,004                                  | 44          | 268   | 500                             | 10                       | 66  | 58                                  | 102                                      |             |  |
| Florida.....            | 94                              | 2,650 | 114  | 4.3                                      | 249                                    | 11          | 37  | 41                              | 2                        | 8   | 68                                  | 93                                       |             |  |
| South Atlantic.....     | 1,751                           | 3,250 | 136.5  | 4.20                                     | 5,690                                  | 239         | 1,389   | 2,022                           | 113                      | 394   | 613                                 | 1,159                                    |             |  |
| Kentucky.....           | 541                             | 3,220 | 138  | 4.3                                      | 1,742                                  | 75          | 437   | 37                              | 30                       | 498   | 145                                 | 195                                      |             |  |
| Tennessee.....          | 513                             | 2,930 | 129  | 4.4                                      | 1,503                                  | 66          | 339   | 526                             | 18                       | 255   | 78                                  | 287                                      |             |  |
| Alabama.....            | 412                             | 2,700 | 120  | 4.45                                     | 1,112                                  | 49          | 296   | 611                             | 9                        | 50  | 65                                  | 81                                       |             |  |
| Mississippi.....        | 525                             | 2,300 | 104  | 4.5                                      | 1,208                                  | 55          | 271   | 432                             | 10                       | 199   | 54                                  | 242                                      |             |  |
| Arkansas.....           | 438                             | 2,450 | 107  | 4.3                                      | 1,086                                  | 47          | 258   | 420                             | 9                        | 261   | 75                                  | 63                                       |             |  |
| Louisiana.....          | 270                             | 1,900 | 84   | 4.4                                      | 513                                    | 23          | 189   | 97                              | 5                        | 24  | 66                                  | 132                                      |             |  |
| Oklahoma.....           | 735                             | 2,950 | 125  | 4.25                                     | 2,168                                  | 92          | 443   | 394                             | 48                       | 884   | 166                                 | 233                                      |             |  |
| Texas.....              | 1,335                           | 2,800 | 123  | 4.4                                      | 3,738                                  | 164         | 904   | 1,041                           | 56                       | 933   | 285                                 | 519                                      |             |  |
| South Central.....      | 4,769                           | 2,741 | 119.7  | 4.37                                     | 13,070                                 | 571         | 3,137   | 3,958                           | 185                      | 3,104   | 934                                 | 1,752                                    |             |  |
| Montana.....            | 191                             | 3,750 | 146  | 3.9                                      | 716                                    | 28          | 92  | 110                             | 23                       | 353   | 65                                  | 73                                       |             |  |
| Idaho.....              | 193                             | 5,020 | 198  | 3.95                                     | 969                                    | 38          | 104   | 50                              | 25                       | 513   | 41                                  | 236                                      |             |  |
| Wyoming.....            | 68                              | 3,680 | 142  | 3.85                                     | 250                                    | 10          | 35  | 27                              | 8                        | 118   | 23                                  | 39                                       |             |  |
| Colorado.....           | 262                             | 3,790 | 144  | 3.8                                      | 993                                    | 38          | 141   | 81                              | 38                       | 423   | 48                                  | 262                                      |             |  |
| New Mexico.....         | 68                              | 2,960 | 118  | 4.0                                      | 201                                    | 8           | 42  | 30                              | 4                        | 78  | 34                                  | 13                                       |             |  |
| Arizona.....            | 43                              | 4,900 | 189  | 3.85                                     | 211                                    | 8           | 24  | 11                              | 5                        | 59  | 42                                  | 70                                       |             |  |
| Utah.....               | 106                             | 4,980 | 189  | 3.8                                      | 528                                    | 20          | 62  | 37                              | 16                       | 147   | 36                                  | 230                                      |             |  |
| Nevada.....             | 21                              | 4,550 | 173  | 3.8                                      | 96                                     | 4           | 8   | 4                               | 3                        | 61  | 14                                  | 6  |             |  |
| Washington.....         | 309                             | 5,700 | 231  | 4.05                                     | 1,761                                  | 71          | 149   | 68                              | 56                       | 572   | 143                                 | 773                                      |             |  |
| Oregon.....             | 260                             | 5,050 | 217  | 4.3                                      | 1,313                                  | 58          | 121   | 55                              | 39                       | 561   | 89                                  | 448                                      |             |  |
| California.....         | 609                             | 6,550 | 249  | 3.8                                      | 3,989                                  | 152         | 180   | 37                              | 112                      | 966   | 415                                 | 2,279                                    |             |  |
| Western.....            | 2,130                           | 5,177 | 203.3  | 3.93                                     | 11,027                                 | 433         | 958   | 510                             | 329                      | 3,851   | 950                                 | 4,429                                    |             |  |
| United States.....      | 24,548                          | 4,030 | 158.3  | 3.93                                     | 98,940                                 | 3,587       | 12,008  | 10,685                          | 2,659                    | 33,275  | 6,992                               | 33,321                                   |             |  |

<sup>1</sup> Estimated average number of milk cows on farms during 1934. The estimates exclude heifers not yet fresh but include some cows which had calves running with them much of the year.

<sup>2</sup> These estimates exclude milk sucked by calves, milk spilled or lost up to the time it is measured, skimmed, or delivered by farmers, and milk produced by cows not on farms.

<sup>3</sup> Approximations based chiefly on the population in small towns and rural areas where most families purchase their milk supply directly from local farmers. Estimates include milk equivalent of cream.

<sup>4</sup> Estimates include milk delivered to creameries, condensaries, cheese factories, and market-milk receiving stations, but exclude market milk sold to other farmers for local retail delivery.

<sup>5</sup> As computed by counties.

Bureau of Agricultural Economics; estimates of Division of Crop and Livestock Estimates.

TABLE 389.—*Dairy products: Annual per capita consumption in the United States, 1924-33*

| Year      | Butter <sup>1</sup> | Cheese <sup>2</sup> | Evaporated milk <sup>3</sup> | Condensed milk <sup>3</sup> | Milk used in cities and villages <sup>4</sup> | Milk equivalent, all products <sup>5</sup> |
|-----------|---------------------|---------------------|------------------------------|-----------------------------|---|--|
|           | Pounds              | Pounds              | Pounds                       | Pounds                      | Gallons                                       | Gallons                                    |
| 1924..... | 18.18               | 4.20                | -----                        | -----                       | 38.6  | 91.7                                       |
| 1925..... | 17.69               | 4.26                | -----                        | -----                       | 38.9  | 92.1                                       |
| 1926..... | 17.66               | 4.36                | 11.56                        | 2.75                        | 39.3  | 94.6                                       |
| 1927..... | 17.43               | 4.14                | 11.59                        | 2.60                        | 39.6  | 94.4                                       |
| 1928..... | 17.21               | 4.11                | 12.50                        | 2.56                        | 39.8  | 94.2                                       |
| 1929..... | 17.40               | 4.62                | 13.83                        | 2.75                        | 40.8  | 94.3                                       |
| 1930..... | 17.36               | 4.71                | 13.68                        | 2.66                        | 40.6  | 94.8                                       |
| 1931..... | 17.96               | 4.49                | 13.70                        | 2.29                        | 40.0  | 96.7                                       |
| 1932..... | 18.10               | 4.39                | 14.41                        | 1.80                        | 40.0  | 95.3                                       |
| 1933..... | 17.64               | 4.51                | 14.23                        | 1.66                        | 38.8  | 92.7                                       |

<sup>1</sup> Includes both farm- and factory-made butter. These estimates include some butter used in other products such as ice cream. <sup>2</sup> Includes all kinds of cheese except cottage, pot, and bakers.

<sup>3</sup> Includes some condensed and evaporated milk used in other products, also includes both whole- and skim-milk product.

<sup>4</sup> Milk and milk equivalent of cream consumed per capita by that part of the population not on rural farms. These estimates include some milk and cream used in such products as ice cream and supersede estimates previously issued.

<sup>5</sup> Based on estimates of milk production on farms and elsewhere, with milk fed to calves deducted in calculating per capita consumption.

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Consumption of butter, cheese, evaporated milk, condensed milk, and milk equivalent of all dairy products is calculated from production, foreign trade, and domestic stocks. Milk used in cities and villages is calculated from board of health reports.

TABLE 390.—*Dairy products: Quantity manufactured, 1926-33*

| Product  | 1926         | 1927         | 1928         | 1929         | 1930         | 1931             | 1932             | 1933             |
|--|--------------|--------------|--------------|--------------|--------------|------------------|------------------|------------------|
|  | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 pounds     | 1,000 pounds     | 1,000 pounds     |
| Creamery butter.....                                       | 1,451,766    | 1,496,495    | 1,437,049    | 1,597,027    | 1,595,231    | 1,667,452        | 1,694,132        | 1,762,688        |
| Whey butter (made from whey cream).....                    | 2,872        | 1,217        | 1,097        | 1,221        | 2,516        | ( <sup>1</sup> ) | ( <sup>1</sup> ) | ( <sup>1</sup> ) |
| Renovated or process butter.....                           | 2,505        | 4,286        | 2,716        | 2,531        | 1,850        | 1,236            | 950              | 1,079            |
| American cheese:   |              |              |              |              |              |                  |                  |                  |
| Whole milk.....  | 335,915      | 307,777      | 335,253      | 370,314      | 378,316      | 374,648          | 370,743          | 408,631          |
| Part skim.....   | 2,927        | 3,390        | 2,900        | 4,951        | 3,653        | 3,108            | 3,319            | 6,338            |
| Full skim.....   | 1,384        | 1,838        | 3,043        | 1,074        | 669          | 416              | 225              | 680              |
| Swiss cheese (including block).....                        | 20,883       | 18,141       | 16,718       | 19,406       | 26,393       | 28,234           | 25,533           | 40,287           |
| Brick and Munster cheese.....                              | 31,048       | 31,546       | 28,960       | 31,763       | 33,548       | 35,494           | 36,973           | 36,057           |
| Limburger cheese.....                                      | 9,639        | 8,842        | 7,437        | 8,568        | 8,473        | 8,508            | 7,897            | 9,469            |
| Cream and Neufchatel cheese.....                           | 18,192       | 25,962       | 30,589       | 34,405       | 33,213       | 33,637           | 31,608           | 33,438           |
| All Italian varieties of cheese.....                       | 2,425        | 3,377        | 3,587        | 5,948        | 8,573        | 3,493            | 3,795            | 4,759            |
| All other varieties of cheese.....                         | 5,003        | 5,763        | 9,027        | 7,504        | 7,029        | 4,851            | 4,010            | 4,076            |
| Cottage, pot, and bakers' cheese.....                      | 67,977       | 75,679       | 87,525       | 94,941       | 97,641       | 101,617          | 103,524          | 100,854          |
| Condensed milk (sweetened):                                |              |              |              |              |              |                  |                  |                  |
| Case goods:  |              |              |              |              |              |                  |                  |                  |
| Skimmed.....   | 1,298        | 1,623        | 1,366        | 1,632        | 2,092        | 1,757            | 1,167            | 1,260            |
| Unskimmed.....   | 154,944      | 161,355      | 139,077      | 145,922      | 121,626      | 97,469           | 70,288           | 53,880           |
| Bulk goods:  |              |              |              |              |              |                  |                  |                  |
| Skimmed.....   | 147,473      | 143,722      | 154,723      | 202,475      | 153,971      | 140,361          | 120,923          | 114,936          |
| Unskimmed.....   | 55,737       | 39,668       | 33,660       | 51,689       | 62,421       | 45,887           | 42,638           | 40,964           |
| Unsweetened condensed milk (plain condensed): <sup>2</sup> |              |              |              |              |              |                  |                  |                  |
| Bulk goods:  |              |              |              |              |              |                  |                  |                  |
| Skimmed.....   | 116,758      | 126,085      | 147,625      | 153,624      | 156,212      | 145,416          | 138,646          | 127,197          |
| Unskimmed.....   | 86,833       | 101,354      | 89,338       | 151,662      | 128,203      | 110,039          | 96,052           | 86,992           |
| Evaporated milk (unsweetened):                             |              |              |              |              |              |                  |                  |                  |
| Case goods:  |              |              |              |              |              |                  |                  |                  |
| Skimmed.....   | 11,985       | 8,100        | 10,618       | -----        | 1,650        | 86               | -----            | -----            |
| Unskimmed.....   | 1,158,476    | 1,273,815    | 1,337,022    | 1,499,644    | 1,449,149    | 1,428,963        | 1,570,612        | 1,716,700        |
| Condensed or evaporated buttermilk.....                    | 86,687       | 99,190       | 102,452      | 107,288      | 96,431       | 64,619           | 52,167           | 50,175           |
| Dried or powdered buttermilk.....                          | 31,378       | 38,435       | 45,502       | 54,215       | 64,801       | 50,535           | 48,712           | 53,260           |
| Powdered whole milk.....                                   | 10,768       | 11,464       | 9,605        | 13,202       | 15,440       | 12,627           | 11,983           | 13,026           |
| Powdered skimmed milk.....                                 | 91,718       | 118,123      | 147,990      | 207,579      | 260,675      | 261,938          | 270,194          | 288,114          |
| Powdered cream.....  | 331          | 338          | 673          | 294          | 490          | 161              | 80               | 154              |
| Dried casein (skim milk or buttermilk product).....        | 16,953       | 18,033       | 22,151       | 30,537       | 41,965       | 35,335           | 24,428           | 24,087           |
| Malted milk.....   | 20,673       | 22,116       | 21,128       | 22,850       | 22,691       | 18,197           | 13,215           | 12,430           |
| Milk sugar (crude).....                                    | 4,476        | 4,077        | 5,323        | 8,965        | 12,779       | 9,562            | -----            | -----            |
| Ice cream of all kinds (gallons) <sup>3</sup> .....        | 215,248      | 228,756      | 232,185      | 254,618      | 240,750      | 208,239          | 154,604          | 148,913          |

<sup>1</sup> Included in creamery butter.

<sup>2</sup> Unsweetened condensed milk (plain condensed) was classified as "Evaporated milk (unsweetened), bulk goods", in previous years. <sup>3</sup> Production in commercial ice-cream factories only.

Bureau of Agricultural Economics, compiled from reports of factories made direct to the Bureau.

Figures beginning with the year 1929 are the most complete since these reports were inaugurated in 1918. Some allowance, therefore, should be made for this when comparing production since 1929 with that of previous years.

TABLE 391.—*Dairy products: Quantity manufactured, by months, 1933*

| Product   | Jan.             | Feb.             | Mar.             | Apr.             | May              | June             | July             | Aug.             | Sept.            | Oct.             | Nov.             | Dec.             | Total            |
|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| <i>1,000 lb.</i>  | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> |
| Creamery butter <sup>1</sup> .....  | 130,245          | 123,322          | 133,248          | 136,306          | 191,068          | 201,960          | 176,820          | 106,662          | 140,088          | 180,464          | 115,215          | 116,384          | 1,702,688        |
| Renovated or process butter.....  | 124              | 77               | 72               | 80               | 90               | 71               | 126              | 94               | 68               | 88               | 83               | 108              | 1,079            |
| American cheese:  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Whole milk.....   | 24,877           | 23,808           | 28,571           | 32,356           | 43,664           | 54,653           | 48,206           | 42,857           | 35,620           | 20,804           | 21,010           | 23,179           | 408,631          |
| Part skim.....  | 420              | 406              | 560              | 602              | 700              | 785              | 690              | 469              | 608              | 580              | 423              | 353              | 6,338            |
| Full skim.....  | 23               | 27               | 31               | 26               | 14               | 14               | 63               | 162              | 191              | 83               | 83               | 23               | 680              |
| Swiss cheese (including block).....   | 1,137            | 1,127            | 1,067            | 2,069            | 3,431            | 5,526            | 5,274            | 4,920            | 4,315            | 3,931            | 2,841            | 2,329            | 40,287           |
| Munster cheese.....   | 0,076            | 1,675            | 900              | 936              | 603              | 443              | 374              | 374              | 400              | 561              | 500              | 709              | 7,106            |
| Brick cheese.....   | 2,277            | 1,967            | 2,479            | 2,944            | 3,237            | 3,601            | 2,741            | 2,346            | 1,860            | 1,885            | 1,451            | 2,074            | 28,951           |
| Limburger cheese.....   | 420              | 381              | 703              | 703              | 1,065            | 1,162            | 1,041            | 988              | 940              | 930              | 682              | 602              | 9,469            |
| All Italian varieties of cheese.....  | 328              | 323              | 405              | 421              | 414              | 437              | 371              | 318              | 334              | 362              | 463              | 606              | 4,769            |
| Neufchatel cheese.....  | 65               | 65               | 61               | 65               | 61               | 51               | 30               | 37               | 41               | 72               | 63               | 80               | 696              |
| Cream cheese.....   | 2,741            | 2,767            | 2,902            | 2,669            | 2,632            | 2,469            | 2,366            | 2,162            | 2,642            | 2,818            | 3,265            | 3,499            | 32,732           |
| All other varieties of cheese.....  | 353              | 331              | 374              | 379              | 306              | 359              | 278              | 278              | 294              | 366              | 444              | 386              | 4,076            |
| Cottage, pot, and bakers' cheese.....                                       | 7,566            | 7,665            | 9,005            | 8,519            | 9,400            | 9,777            | 9,200            | 8,427            | 7,921            | 8,266            | 7,613            | 7,253            | 100,854          |
| Swissened condensed milk:   |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Case goods—   |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Unskimmed.....  | 127              | 144              | 67               | 71               | 117              | 110              | 51               | 142              | 59               | 128              | 147              | 97               | 1,290            |
| Skimmed.....  | 4,884            | 4,216            | 4,374            | 4,473            | 6,427            | 5,062            | 4,753            | 4,000            | 8,365            | 3,869            | 3,915            | 4,420            | 55,880           |
| Bulk goods:   |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Unskimmed.....  | 7,318            | 7,065            | 7,729            | 9,426            | 12,938           | 14,627           | 9,653            | 8,231            | 10,120           | 10,693           | 8,495            | 8,451            | 114,636          |
| Skimmed.....  | 2,989            | 2,603            | 3,123            | 3,263            | 4,350            | 4,520            | 3,227            | 4,044            | 5,023            | 3,817            | 2,310            | 2,670            | 40,904           |
| Unsweetened condensed milk (plain condensed):                               |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Bulk:   |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Unskimmed.....  | 7,931            | 7,305            | 8,805            | 10,144           | 14,024           | 16,630           | 14,690           | 14,089           | 10,094           | 8,255            | 6,688            | 7,383            | 127,107          |
| Skimmed.....  | 5,362            | 4,822            | 6,191            | 8,951            | 11,607           | 11,267           | 9,847            | 7,811            | 7,304            | 5,695            | 5,694            | 4,051            | 86,992           |
| Evaporated milk (unsweetened):  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Case goods—Unskimmed.....   | 110,947          | 109,622          | 145,700          | 176,105          | 213,174          | 220,953          | 170,394          | 154,605          | 129,309          | 112,268          | 73,592           | 84,755           | 1,716,700        |
| Unskimmed.....  | 1,280            | 1,221            | 1,408            | 1,466            | 1,245            | 1,396            | 1,791            | 1,683            | 1,191            | 1,640            | 1,456            | 1,441            | 17,217           |
| Concentrated or evaporated buttermilk (including concentrated product)..... | 3,380            | 3,019            | 2,893            | 2,014            | 4,413            | 5,900            | 5,076            | 5,418            | 4,927            | 4,992            | 4,183            | 3,900            | 50,175           |
| Dried or powdered buttermilk.....   | 3,966            | 3,876            | 4,425            | 4,630            | 6,163            | 6,340            | 6,250            | 4,692            | 3,750            | 3,694            | 3,211            | 3,340            | 53,260           |
| Powdered whole milk.....  | 407              | 407              | 761              | 825              | 1,292            | 1,463            | 1,238            | 1,431            | 1,197            | 1,126            | 1,275            | 1,229            | 13,026           |
| Powdered skim milk.....   | 21,770           | 19,540           | 22,760           | 24,843           | 30,315           | 31,650           | 26,605           | 21,407           | 21,040           | 23,071           | 20,046           | 24,536           | 288,114          |
| Powdered cream.....   | 2                | 6                | 1                | 6                | 12               | 31               | 27               | 13               | 30               | 13               | 8                | 11               | 154              |
| Dried casein (skim milk, or buttermilk).....                                | 1,608            | 1,401            | 1,771            | 2,047            | 2,370            | 2,650            | 1,900            | 1,688            | 1,890            | 2,409            | 2,114            | 2,354            | 24,087           |
| Malted milk.....  | 1,031            | 956              | 1,000            | 1,192            | 1,160            | 1,164            | 972              | 904              | 1,010            | 1,010            | 926              | 893              | 12,430           |
| Ice cream, gallons <sup>2</sup> .....                                       | 6,342            | 5,712            | 7,378            | 9,782            | 16,809           | 23,631           | 22,641           | 20,280           | 14,633           | 8,782            | 6,348            | 6,352            | 148,913          |
| Sherbets, gallons <sup>2</sup> .....  | 61               | 62               | 83               | 113              | 202              | 344              | 345              | 279              | 191              | 116              | 84               | 77               | 1,057            |

<sup>1</sup> Includes whey butter.<sup>2</sup> Production in commercial ice-cream factories only.

Unsweetened condensed milk (plain condensed) was classified as "Evaporated milk (unsweetened) bulk goods", in previous years.

Bureau of Agricultural Economics; compiled from reports made direct to the Bureau.

TABLE 392.—Milk: Supply and distribution of milk<sup>1</sup> in the United States, 1924-23

| Item   | 1924                         | 1925                         | 1926                         | 1927                         | 1928                         | 1929                         | 1930                         | 1931                          | 1932                          | 1933                          |
|--|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|-------------------------------|
| <b>Supply:</b>   |                              |                              |                              |                              |                              |                              |                              |                               |                               |                               |
| Milk produced—   |                              |                              |                              |                              |                              |                              |                              |                               |                               |                               |
| By cows on farms.....  | Million<br>pounds<br>87, 069 | Million<br>pounds<br>88, 375 | Million<br>pounds<br>91, 887 | Million<br>pounds<br>94, 307 | Million<br>pounds<br>95, 910 | Million<br>pounds<br>98, 782 | Million<br>pounds<br>99, 736 | Million<br>pounds<br>101, 970 | Million<br>pounds<br>101, 863 | Million<br>pounds<br>102, 309 |
| By cows not on farms.....  | 4, 420                       | 4, 241                       | 4, 079                       | 3, 846                       | 3, 524                       | 3, 145                       | 2, 826                       | 2, 826                        | 2, 826                        | 2, 826                        |
| Imports for consumption: <sup>2</sup>  |                              |                              |                              |                              |                              |                              |                              |                               |                               |                               |
| Manufactured dairy products <sup>3</sup> .....   | 973                          | 741                          | 874                          | 963                          | 876                          | 805                          | 721                          | 623                           | 536                           | 497                           |
| Fresh milk and cream.....  | 405                          | 508                          | 526                          | 456                          | 353                          | 291                          | 151                          | 12                            | 11                            | ( <sup>4</sup> )              |
| Stocks on hand Jan. 1:   |                              |                              |                              |                              |                              |                              |                              |                               |                               |                               |
| Manufactured dairy products <sup>5</sup> .....   | 1, 095                       | 2, 318                       | 2, 219                       | 1, 669                       | 2, 007                       | 2, 197                       | 3, 127                       | 2, 680                        | 1, 078                        | 1, 417                        |
| Fresh cream (40 percent).....  | ( <sup>6</sup> )             | ( <sup>6</sup> )             | ( <sup>6</sup> )             | ( <sup>6</sup> )             | ( <sup>6</sup> )             | ( <sup>6</sup> )             | ( <sup>6</sup> )             | 185                           | 52                            | 145                           |
| Total.....   | 94, 562                      | 96, 183                      | 99, 585                      | 101, 241                     | 102, 675                     | 105, 220                     | 106, 561                     | 108, 296                      | 108, 966                      | 107, 194                      |
| <b>Distribution:</b>   |                              |                              |                              |                              |                              |                              |                              |                               |                               |                               |
| Exports, domestic: <sup>7</sup>  |                              |                              |                              |                              |                              |                              |                              |                               |                               |                               |
| Manufactured dairy products <sup>8</sup> .....   | 697                          | 551                          | 423                          | 371                          | 332                          | 372                          | 310                          | 277                           | 178                           | 133                           |
| Fresh milk and cream.....  | 1                            | 1                            | ( <sup>4</sup> )             | 1                            | 1                            | 2                            | 2                            | 2                             | ( <sup>4</sup> )              | ( <sup>4</sup> )              |
| Shipments to noncontiguous territories: Manufactured dairy products <sup>9</sup> ..... | 146                          | 131                          | 131                          | 139                          | 132                          | 131                          | 144                          | 162                           | 104                           | 180                           |
| Stocks on hand Dec. 31:  |                              |                              |                              |                              |                              |                              |                              |                               |                               |                               |
| Manufactured dairy products <sup>5</sup> .....   | 2, 318                       | 2, 219                       | 1, 669                       | 2, 007                       | 2, 197                       | 3, 127                       | 2, 680                       | 1, 078                        | 1, 417                        | 3, 763                        |
| Fresh cream (40 percent).....  | ( <sup>6</sup> )             | ( <sup>6</sup> )             | ( <sup>6</sup> )             | ( <sup>6</sup> )             | ( <sup>6</sup> )             | ( <sup>6</sup> )             | ( <sup>6</sup> )             | 52                            | 145                           | 149                           |
| Milk fed to calves on farms.....   | 2, 177                       | 2, 202                       | 2, 554                       | 2, 744                       | 2, 887                       | 3, 010                       | 2, 976                       | 2, 984                        | 2, 806                        | 2, 800                        |
| Total distribution exclusive of disappearance for domestic human consumption.....      | 5, 339                       | 5, 164                       | 4, 777                       | 5, 262                       | 5, 509                       | 6, 642                       | 6, 112                       | 5, 134                        | 4, 710                        | 7, 025                        |
| Disappearance for domestic human consumption.....                                      | 86, 223                      | 91, 019                      | 94, 808                      | 95, 979                      | 97, 076                      | 98, 578                      | 100, 449                     | 103, 162                      | 102, 256                      | 100, 169                      |
| Population, July 1 census estimates.....   | 113, 202                     | 114, 867                     | 116, 532                     | 118, 197                     | 119, 862                     | 121, 526                     | 123, 191                     | 124, 070                      | 124, 822                      | 125, 063                      |
| Per capita disappearance.....  | 788.2                        | 792.4                        | 813.6                        | 812.0                        | 800.9                        | 811.2                        | 815.4                        | 831.5                         | 819.2                         | 796.9                         |
| Per capita disappearance.....  | 91.7                         | 92.1                         | 94.6                         | 94.4                         | 94.2                         | 94.3                         | 94.8                         | 96.7                          | 95.3                          | 92.7                          |

<sup>1</sup> Milk, manufactured dairy products and cream, expressed in milk equivalent.<sup>2</sup> Imports for consumption less "general imports" of noncontiguous territories.<sup>3</sup> Includes butter, cheese, condensed and evaporated milk, dry milk, dry cream, and malted milk and compounds.<sup>4</sup> Less than 500,000 pounds.<sup>5</sup> Includes stocks in cold storage of butter and all cheese, and manufactured stocks of condensed and evaporated milk (case goods only), dry whole milk and cream powder.<sup>6</sup> Not reported prior to 1931.<sup>7</sup> Domestic exports less domestic exports of noncontiguous territories.<sup>8</sup> Includes butter, cheese, condensed and evaporated milk, dried milk and infants' foods, and malted milk.

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TABLE 393.—*Fluid milk and cream: Receipts<sup>1</sup> at New York, Philadelphia, Boston, and Chicago, by origin, 1933 and 1934*

| Product and State of origin | New York                          |                                   | Philadelphia                      |                                   | Boston                            |                                   | Chicago                           |
|-----------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
|                             | 1933                              | 1934                              | 1933                              | 1934                              | 1933                              | 1934                              | 1934                              |
| <b>Fluid milk:</b>          | <i>40-quart units<sup>2</sup></i> | <i>40-quart units<sup>2</sup></i> | <i>40-quart units<sup>2</sup></i> | <i>40-quart units<sup>2</sup></i> | <i>40-quart units<sup>2</sup></i> | <i>40-quart units<sup>2</sup></i> | <i>40-quart units<sup>2</sup></i> |
| Connecticut.....            | 231, 895                          | 202, 333                          |                                   |                                   |                                   |                                   |                                   |
| Delaware.....               | 34, 837                           | 41, 706                           | 517, 018                          | 451, 705                          |                                   |                                   |                                   |
| Indiana.....                | 2, 643                            | 216                               | 340                               |                                   |                                   |                                   |                                   |
| Maine.....                  |                                   |                                   |                                   |                                   | 769, 494                          | 683, 063                          |                                   |
| Maryland.....               | 153, 104                          | 153, 223                          | 847, 706                          | 849, 866                          |                                   |                                   |                                   |
| Massachusetts.....          | 133, 206                          | 145, 451                          |                                   |                                   | 544, 091                          | 530, 629                          |                                   |
| New Hampshire.....          |                                   |                                   |                                   |                                   | 670, 569                          | 765, 003                          |                                   |
| New Jersey.....             | 3, 337, 760                       | 3, 433, 275                       | 562, 933                          | 595, 523                          |                                   |                                   |                                   |
| New York.....               | 22, 333, 523                      | 20, 865, 653                      |                                   |                                   | 359, 366                          | 341, 497                          |                                   |
| Ohio.....                   | 4, 910                            | 1, 127                            |                                   |                                   |                                   |                                   |                                   |
| Pennsylvania.....           | 5, 333, 028                       | 5, 455, 943                       | 4, 844, 597                       | 5, 073, 585                       |                                   |                                   |                                   |
| Rhode Island.....           |                                   |                                   |                                   |                                   | 1, 883                            | 12, 949                           |                                   |
| Tennessee.....              | 496                               |                                   |                                   |                                   |                                   |                                   |                                   |
| Vermont.....                | 1, 376, 316                       | 1, 223, 945                       |                                   |                                   | 3, 376, 147                       | 3, 415, 786                       |                                   |
| Virginia.....               |                                   |                                   | 5, 548                            |                                   |                                   |                                   |                                   |
| West Virginia.....          |                                   |                                   | 9, 367                            | 23, 084                           |                                   |                                   |                                   |
| Wisconsin.....              |                                   |                                   | 122                               |                                   |                                   |                                   |                                   |
| Total.....                  | 33, 041, 773                      | 31, 562, 922                      | 6, 737, 631                       | 6, 998, 763                       | 5, 721, 550                       | 5, 753, 927                       |                                   |
| <b>Fluid cream:</b>         |                                   |                                   |                                   |                                   |                                   |                                   |                                   |
| Alabama.....                |                                   |                                   |                                   |                                   |                                   | 200                               |                                   |
| Arkansas.....               |                                   |                                   |                                   |                                   |                                   |                                   | 8, 193                            |
| Connecticut.....            | 6, 707                            | 5, 702                            |                                   |                                   | 200                               |                                   |                                   |
| Delaware.....               | 3, 292                            | 983                               | 3, 178                            | 2, 556                            |                                   |                                   |                                   |
| District of Columbia.....   |                                   |                                   | 150                               | 690                               |                                   |                                   |                                   |
| Illinois.....               | 725                               |                                   | 2, 263                            | 1, 821                            | 3, 950                            | 1, 400                            | 179, 931                          |
| Indiana.....                | 17, 355                           | 10, 402                           | 44, 434                           | 20, 533                           | 22, 563                           | 7, 731                            | 20, 973                           |
| Iowa.....                   |                                   |                                   |                                   |                                   |                                   |                                   | 7, 782                            |
| Kansas.....                 |                                   |                                   |                                   |                                   | 7, 975                            | 2, 000                            | 163                               |
| Kentucky.....               |                                   |                                   |                                   |                                   |                                   |                                   | 10, 196                           |
| Maine.....                  |                                   |                                   |                                   |                                   | 52, 628                           | 45, 365                           |                                   |
| Maryland.....               | 670                               | 450                               | 34, 202                           | 20, 634                           | 1, 700                            | 400                               |                                   |
| Massachusetts.....          | 863                               | 1, 771                            |                                   |                                   | 1, 509                            | 2, 202                            |                                   |
| Michigan.....               | 642                               | 200                               | 1, 400                            | 600                               | 43, 302                           | 50, 015                           | 2, 419                            |
| Minnesota.....              |                                   |                                   | 5, 925                            | 1, 990                            | 21, 882                           | 9, 299                            | 1                                 |
| Mississippi.....            |                                   |                                   |                                   |                                   |                                   |                                   | 310                               |
| Missouri.....               | 800                               |                                   | 4, 009                            | 3, 506                            | 30, 703                           | 13, 834                           | 29, 748                           |
| New Hampshire.....          |                                   |                                   |                                   |                                   | 19, 954                           | 19, 949                           |                                   |
| New Jersey.....             | 23, 474                           | 25, 904                           | 2, 032                            | 260                               |                                   |                                   |                                   |
| New York.....               | 1, 135, 418                       | 1, 172, 651                       | 2, 121                            | 17, 902                           | 23, 325                           | 66, 808                           |                                   |
| Ohio.....                   | 30, 248                           | 26, 772                           | 8, 940                            | 9, 237                            | 15, 435                           | 14, 160                           | 6, 175                            |
| Oklahoma.....               |                                   |                                   |                                   |                                   |                                   |                                   | 245                               |
| Pennsylvania.....           | 200, 573                          | 176, 691                          | 69, 497                           | 104, 757                          | 207                               | 360                               | 25                                |
| Rhode Island.....           |                                   |                                   |                                   |                                   | 73                                | 1                                 |                                   |
| Tennessee.....              | 5, 600                            |                                   |                                   |                                   | 11, 383                           | 22, 449                           | 1, 394                            |
| Texas.....                  | 200                               |                                   | 200                               |                                   |                                   |                                   |                                   |
| Vermont.....                | 121, 346                          | 90, 897                           |                                   |                                   | 228, 457                          | 272, 806                          |                                   |
| Virginia.....               |                                   |                                   | 4, 434                            | 246                               |                                   |                                   |                                   |
| West Virginia.....          | 200                               |                                   | 2, 620                            | 1, 385                            |                                   |                                   |                                   |
| Wisconsin.....              | 25, 333                           | 6, 150                            | 83, 172                           | 76, 470                           | 52, 162                           | 56, 335                           | 259, 647                          |
| Total.....                  | 1, 573, 461                       | 1, 513, 573                       | 263, 577                          | 262, 612                          | 539, 406                          | 586, 264                          | 527, 222                          |

<sup>1</sup> Figures include both rail and truck receipts at New York, Philadelphia, and Boston; Chicago receipts are rail only.

<sup>2</sup> 40-quart units equal standard 10-gallon cans.

<sup>3</sup> Revised.

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TABLE 394.—*Milk: Average price per 100 pounds received by producers, United States, 1925-34*

| Year | Jan.<br>15  | Feb.<br>15  | Mar.<br>15  | Apr.<br>15  | May<br>15   | June<br>15  | July<br>15  | Aug.<br>15  | Sept.<br>15 | Oct.<br>15  | Nov.<br>15  | Dec.<br>15  | Weighted<br>average <sup>1</sup> |
|------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------------------|
|      | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i>                      |
| 1925 | 2.48        | 2.55        | 2.62        | 2.48        | 2.47        | 2.47        | 2.45        | 2.55        | 2.56        | 2.73        | 2.69        | 2.65        | 2.55                             |
| 1926 | 2.74        | 2.68        | 2.56        | 2.46        | 2.39        | 2.35        | 2.40        | 2.37        | 2.47        | 2.46        | 2.60        | 2.61        | 2.50                             |
| 1927 | 2.68        | 2.64        | 2.55        | 2.58        | 2.61        | 2.44        | 2.40        | 2.36        | 2.48        | 2.55        | 2.56        | 2.64        | 2.52                             |
| 1928 | 2.67        | 2.69        | 2.61        | 2.51        | 2.49        | 2.45        | 2.45        | 2.46        | 2.56        | 2.60        | 2.63        | 2.65        | 2.55                             |
| 1929 | 2.64        | 2.64        | 2.68        | 2.59        | 2.53        | 2.47        | 2.46        | 2.50        | 2.52        | 2.55        | 2.59        | 2.60        | 2.57                             |
| 1930 | 2.53        | 2.44        | 2.38        | 2.35        | 2.28        | 2.22        | 2.15        | 2.15        | 2.25        | 2.30        | 2.31        | 2.20        | 2.26                             |
| 1931 | 2.04        | 1.96        | 1.92        | 1.85        | 1.73        | 1.66        | 1.62        | 1.64        | 1.70        | 1.72        | 1.73        | 1.67        | 1.70                             |
| 1932 | 1.56        | 1.46        | 1.43        | 1.39        | 1.29        | 1.17        | 1.20        | 1.21        | 1.25        | 1.28        | 1.26        | 1.26        | 1.29                             |
| 1933 | 1.25        | 1.16        | 1.10        | 1.08        | 1.14        | 1.21        | 1.33        | 1.39        | 1.47        | 1.51        | 1.51        | 1.49        | 1.29                             |
| 1934 | 1.44        | 1.48        | 1.50        | 1.46        | 1.45        | 1.47        | 1.50        | 1.52        | 1.57        | 1.60        | 1.65        | 1.69        | 1.52                             |

<sup>1</sup> Yearly State averages weighted by volume sold to obtain yearly average for the United States, 1929-34.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by number of milk cows Jan. 1, to obtain a price for the United States. Prices quoted are for milk sold to dealers, factories, etc.

TABLE 395.—*Milk: Milk dealers' average buying prices per hundredweight for standard grade milk testing 3.5 percent butterfat which is used for city distribution as milk and cream, 1925-34*

[F. o. b. local shipping point or country plant]

| Year | Jan.        | Feb.        | Mar.        | Apr.        | May         | June        | July        | Aug.        | Sept.       | Oct.        | Nov.        | Dec.        | Average     |
|------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|      | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> |
| 1925 | 2.68        | 2.73        | 2.65        | 2.62        | 2.53        | 2.50        | 2.55        | 2.65        | 2.66        | 2.79        | 2.78        | 2.80        | 2.67        |
| 1926 | 2.87        | 2.79        | 2.78        | 2.77        | 2.64        | 2.62        | 2.65        | 2.68        | 2.71        | 2.76        | 2.79        | 2.84        | 2.74        |
| 1927 | 2.83        | 2.78        | 2.74        | 2.71        | 2.67        | 2.62        | 2.63        | 2.67        | 2.68        | 2.75        | 2.78        | 2.81        | 2.72        |
| 1928 | 2.87        | 2.83        | 2.79        | 2.74        | 2.65        | 2.65        | 2.68        | 2.73        | 2.76        | 2.82        | 2.86        | 2.88        | 2.77        |
| 1929 | 2.87        | 2.86        | 2.83        | 2.79        | 2.77        | 2.69        | 2.76        | 2.77        | 2.82        | 2.85        | 2.88        | 2.86        | 2.81        |
| 1930 | 2.81        | 2.77        | 2.74        | 2.69        | 2.63        | 2.57        | 2.60        | 2.60        | 2.73        | 2.69        | 2.68        | 2.59        | 2.68        |
| 1931 | 2.46        | 2.38        | 2.33        | 2.25        | 2.14        | 2.16        | 2.13        | 2.20        | 2.14        | 2.14        | 2.10        | 2.00        | 2.20        |
| 1932 | 1.95        | 1.88        | 1.80        | 1.77        | 1.71        | 1.69        | 1.62        | 1.64        | 1.64        | 1.68        | 1.64        | 1.57        | 1.72        |
| 1933 | 1.55        | 1.50        | 1.46        | 1.47        | 1.45        | 1.49        | 1.57        | 1.67        | 1.72        | 1.77        | 1.79        | 1.80        | 1.60        |
| 1934 | 1.81        | 1.80        | 1.79        | 1.81        | 1.81        | 1.82        | 1.86        | 1.91        | 1.97        | 2.02        | 2.03        | 2.04        | 1.89        |

Bureau of Agricultural Economics. Compiled from reports of the Bureau, secured through the cooperation of milk distributors, producers' associations, and municipal officers.

TABLE 396.—*Milk: Average prices per hundredweight paid producers by condensaries for milk testing 3.5 percent butterfat, f. o. b. factory, 1925-34*

| Year | Jan.        | Feb.        | Mar.        | Apr.        | May         | June        | July        | Aug.        | Sept.       | Oct.        | Nov.        | Dec.        | Average     |
|------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|      | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> |
| 1925 | 1.92        | 1.93        | 1.93        | 1.93        | 1.88        | 1.82        | 1.91        | 1.98        | 2.01        | 2.09        | 2.15        | 2.15        | 1.81        |
| 1926 | 2.17        | 2.06        | 2.03        | 1.93        | 1.81        | 1.79        | 1.79        | 1.84        | 1.95        | 2.00        | 2.09        | 2.22        | 1.97        |
| 1927 | 2.28        | 2.28        | 2.20        | 2.14        | 2.00        | 1.91        | 1.91        | 2.00        | 2.07        | 2.15        | 2.20        | 2.25        | 2.12        |
| 1928 | 2.27        | 2.22        | 2.08        | 2.05        | 1.97        | 1.92        | 1.96        | 2.07        | 2.16        | 2.19        | 2.21        | 2.28        | 2.12        |
| 1929 | 2.23        | 2.18        | 2.14        | 2.07        | 1.99        | 1.92        | 1.91        | 1.96        | 1.97        | 2.04        | 2.07        | 2.02        | 2.04        |
| 1930 | 1.87        | 1.71        | 1.69        | 1.68        | 1.67        | 1.53        | 1.54        | 1.61        | 1.72        | 1.75        | 1.67        | 1.56        | 1.67        |
| 1931 | 1.42        | 1.35        | 1.27        | 1.21        | 1.12        | 1.04        | 1.02        | 1.02        | 1.12        | 1.22        | 1.23        | 1.19        | 1.18        |
| 1932 | 1.12        | .99         | .95         | .93         | .86         | .81         | .77         | .80         | .85         | .86         | .86         | .92         | .89         |
| 1933 | .95         | .84         | .82         | .81         | .93         | 1.00        | 1.07        | 1.10        | 1.09        | 1.10        | 1.08        | 1.00        | .98         |
| 1934 | .97         | 1.10        | 1.11        | 1.02        | 1.06        | 1.09        | 1.09        | 1.21        | 1.17        | 1.20        | 1.32        | 1.35        | 1.14        |

Bureau of Agricultural Economics. Compiled from reports of the Bureau, secured through the cooperation of firms operating condensaries.

TABLE 397.—*Milk and cream, condensed and evaporated: International trade, average 1925-29, annual 1930-33*

| Country                            | Calendar year   |                 |                 |                 |                 |                 |                  |                    |                   |                     |
|------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|--------------------|-------------------|---------------------|
|                                    | Average 1925-29 |                 | 1930            |                 | 1931            |                 | 1932             |                    | 1933 <sup>1</sup> |                     |
|                                    | Ex-ports        | Im-ports        | Ex-ports        | Im-ports        | Ex-ports        | Im-ports        | Ex-ports         | Im-ports           | Ex-ports          | Im-ports            |
| PRINCIPAL EXPORT-<br>ING COUNTRIES | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds  | 1,000<br>pounds    | 1,000<br>pounds   | 1,000<br>pounds     |
| Netherlands.....                   | 319,831         | 291             | 393,151         | 695             | 415,437         | 1,328           | 396,933          | 109                | 371,049           | 10                  |
| United States.....                 | 118,215         | 2,830           | 90,459          | 1,611           | 75,085          | 1,245           | 50,807           | 1,188              | 37,090            | 1,118               |
| Switzerland.....                   | 76,691          | 35              | 72,660          | 15              | 63,432          | 18              | 29,491           | 18                 | 20,324            | 12                  |
| Denmark.....                       | 55,666          | 17              | 51,916          | 6               | 49,233          | 1               | 56,591           | 0                  | 53,718            | 2                   |
| Canada.....                        | 32,287          | 142             | 20,470          | 164             | 14,458          | 148             | 21,013           | 51                 | 23,069            | 14                  |
| Australia <sup>2</sup> .....       | 20,852          | 70              | 11,459          | 21              | 10,664          | 4               | 17,469           | 2                  | -----             | -----               |
| Norway.....                        | 18,462          | 789             | 13,447          | 111             | 11,280          | 155             | 8,330            | 55                 | 4,119             | 136                 |
| Italy.....                         | 9,804           | 1,335           | 5,141           | 1,761           | 6,374           | 1,461           | 4,882            | 1,009              | 4,720             | 1,037               |
| Irish Free State.....              | 8,658           | 1,598           | 9,720           | 416             | 6,565           | 734             | 10,233           | 295                | 14,426            | 61                  |
| Belgium <sup>3</sup> .....         | 2,532           | 1,416           | 7,389           | 1,420           | 9,541           | 1,808           | 6,467            | <sup>4</sup> 5,036 | 7,530             | <sup>4</sup> 6,793  |
| Czechoslovakia.....                | 532             | 360             | 280             | 281             | 294             | 250             | 20               | 178                | 9                 | 143                 |
| New Zealand <sup>4</sup> .....     | 1,494           | 23              | 2,331           | 1               | 1,004           | 9               | 1,813            | 91                 | 1,961             | 4                   |
| Total.....                         | 665,074         | 8,906           | 678,423         | 6,502           | 663,367         | 7,161           | 604,049          | 8,032              | 538,115           | 9,330               |
| PRINCIPAL IMPORT-<br>ING COUNTRIES |                 |                 |                 |                 |                 |                 |                  |                    |                   |                     |
| United Kingdom.....                | 21,867          | 280,504         | 22,441          | 291,010         | 13,685          | 313,077         | 9,919            | 307,267            | 19,496            | 273,417             |
| Cuba.....                          | 0               | 47,460          | 0               | 33,767          | 0               | 16,433          | 0                | 11,352             | 0                 | -----               |
| Netherlands Indies.....            | 15              | 27,265          | 0               | 33,416          | 0               | 28,695          | 0                | 24,456             | 0                 | <sup>5</sup> 10,267 |
| Philippine Islands.....            | 0               | 25,810          | 0               | 23,077          | 0               | 35,253          | 0                | 23,526             | 0                 | -----               |
| British India.....                 | 0               | 22,365          | 0               | 27,261          | 0               | 21,531          | 0                | 19,217             | 0                 | 19,496              |
| Germany <sup>6</sup> .....         | 1,960           | 15,079          | 6,772           | 4,351           | 2,839           | 1,966           | 2,335            | 1,187              | 1,171             | 5,674               |
| France.....                        | 8,910           | 13,493          | 13,127          | 14,965          | 12,594          | 17,610          | 12,990           | 8,031              | 11,195            | 8,944               |
| China.....                         | 0               | 12,227          | 0               | 11,353          | 0               | 10,026          | 0                | <sup>7</sup> 9,422 | 0                 | 9,209               |
| Union of South Af-<br>rica.....    | 27              | 11,305          | 447             | 4,310           | 1,060           | 2,510           | 1,076            | 1,327              | 983               | 2,135               |
| Japan.....                         | 320             | 9,171           | 786             | 8,396           | 2,228           | 7,679           | 2,338            | 3,549              | 2,999             | 1,645               |
| Peru <sup>4</sup> .....            | 0               | 8,593           | 0               | 7,708           | 0               | 5,966           | 0                | 4,874              | 0                 | -----               |
| Siam <sup>8</sup> .....            | 0               | 7,076           | 0               | 8,311           | 0               | 9,692           | 0                | 11,473             | 0                 | -----               |
| Indo-China.....                    | 162             | 6,275           | 86              | 7,321           | <sup>3</sup> 31 | 6,208           | <sup>3</sup> 32  | 6,963              | -----             | 6,304               |
| Greece.....                        | 0               | 6,644           | 0               | 7,218           | 0               | 6,182           | 0                | 3,767              | 0                 | 2,987               |
| Jamaica.....                       | 0               | 4,198           | 0               | 5,129           | 0               | 5,988           | 0                | 5,242              | 0                 | 5,804               |
| Algeria.....                       | 186             | 3,694           | 1,054           | 6,057           | 88              | 7,069           | <sup>1</sup> 155 | <sup>2</sup> 6,973 | -----             | -----               |
| Trinidad and To-<br>bago.....      | 0               | 3,181           | 0               | 4,130           | 0               | 4,533           | 0                | 4,142              | 0                 | 4,683               |
| Tunis.....                         | 0               | 2,343           | 0               | 3,118           | 0               | 3,242           | 0                | 3,304              | 0                 | 3,446               |
| Ceylon.....                        | 0               | 1,602           | 0               | 2,332           | 0               | 1,647           | 0                | 1,533              | 0                 | 1,668               |
| Brazil.....                        | 0               | 1,431           | 0               | 1,205           | 0               | 494             | 0                | 317                | 0                 | -----               |
| Argentina.....                     | 15              | 1,418           | 17              | 1,550           | 13              | 1,049           | 14               | 842                | 12                | 680                 |
| Egypt.....                         | 353             | 1,356           | 123             | 1,308           | 3               | 1,780           | 3                | 1,297              | 0                 | 1,342               |
| Austria <sup>4</sup> .....         | 213             | 1,214           | 676             | 1,384           | 395             | 1,802           | 207              | 668                | 174               | 485                 |
| Poland.....                        | 34              | 327             | 7               | 267             | 1               | 239             | 0                | 65                 | 0                 | 69                  |
| Total.....                         | 34,062          | 514,031         | 45,536          | 520,444         | 32,937          | 510,671         | 29,119           | 465,794            | 36,030            | 358,255             |

<sup>1</sup> Preliminary.<sup>2</sup> International Yearbook of Agricultural Statistics.<sup>3</sup> Exports include powdered milk.<sup>4</sup> Imports include powdered milk.<sup>5</sup> Java and Madura only.<sup>6</sup> Includes some powdered milk.<sup>7</sup> Figures for Manchuria not included after June 1932.<sup>8</sup> Figures for 12 months ended Mar. 31 of following year.

Bureau of Agricultural Economics; official sources except where otherwise stated.

## DAIRY AND POULTRY STATISTICS

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TABLE 398.—*Milk, standard or grade B: Retail price<sup>1</sup> per quart, delivered to family trade in cities, 1922-34*

| City                  | 1922         | 1923         | 1924         | 1925         | 1926         | 1927         | 1928         | 1929         | 1930         | 1931         | 1932         | 1933         | 1934         |
|-----------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                       | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> |
| Boston.....           | 13.6         | 14.3         | 13.4         | 13.9         | 14.5         | 14.7         | 15.2         | 15.4         | 15.3         | 12.9         | 10.5         | 11.0         | 11.3         |
| New York.....         | 14.6         | 14.8         | 13.9         | 14.8         | 15.0         | 15.3         | 15.6         | 16.0         | 15.7         | 14.7         | 12.0         | 11.1         | 12.6         |
| Philadelphia.....     | 11.2         | 12.5         | 12.0         | 12.0         | 12.2         | 13.0         | 13.0         | 13.3         | 13.0         | 11.7         | 10.0         | 9.9          | 11.0         |
| Pittsburgh.....       | 12.5         | 14.3         | 14.1         | 14.1         | 14.0         | 14.5         | 14.0         | 14.2         | 13.3         | 11.6         | 8.9          | 9.2          | 10.4         |
| Cleveland.....        | 11.4         | 13.8         | 13.3         | 14.0         | 14.2         | 14.2         | 13.9         | 12.5         | 12.1         | 10.7         | 8.7          | 8.9          | 10.5         |
| Indianapolis.....     | 10.4         | 11.8         | 11.9         | 11.0         | 12.0         | 12.0         | 12.1         | 12.3         | 11.9         | 10.2         | 9.4          | 8.5          | 9.0          |
| Chicago.....          | 12.0         | 13.5         | 14.0         | 14.0         | 14.0         | 14.0         | 14.0         | 14.0         | 14.0         | 13.0         | 11.2         | 9.8          | 9.5          |
| Detroit.....          | 12.5         | 13.8         | 13.8         | 13.6         | 14.0         | 13.9         | 14.0         | 14.0         | 13.1         | 11.6         | 9.1          | 9.2          | 10.5         |
| Milwaukee.....        | 9.2          | 10.4         | 10.0         | 10.0         | 10.8         | 11.0         | 11.0         | 11.2         | 11.4         | 9.9          | 8.3          | 8.4          | 9.3          |
| Minneapolis.....      | 10.4         | 11.4         | 11.0         | 11.3         | 11.1         | 11.2         | 12.0         | 12.0         | 12.0         | 10.0         | 8.1          | 7.1          | 9.2          |
| St. Louis.....        | 11.1         | 13.0         | 13.0         | 13.0         | 13.0         | 13.0         | 13.0         | 13.0         | 12.9         | 10.7         | 10.1         | 10.1         | 11.0         |
| Kansas City, Mo.....  | 11.9         | 13.0         | 13.0         | 13.0         | 13.0         | 13.0         | 13.4         | 13.5         | 13.2         | 12.2         | 10.2         | 9.8          | 11.0         |
| Washington, D. C..... | 13.3         | 14.2         | 14.3         | 14.2         | 14.6         | 15.0         | 14.9         | 14.5         | 14.5         | 14.1         | 13.3         | 12.6         | 12.9         |
| Jacksonville.....     | 16.0         | 17.0         | 18.0         | 18.8         | 20.2         | 19.2         | 18.6         | 18.6         | 18.5         | 15.8         | 12.7         | 13.4         | 14.2         |
| Louisville.....       | 10.2         | 12.4         | 12.5         | 12.7         | 12.5         | 12.5         | 12.6         | 13.0         | 12.4         | 11.3         | 10.0         | 10.3         | 11.2         |
| Birmingham.....       | 17.1         | 16.0         | 16.9         | 18.0         | 18.0         | 17.0         | 18.0         | 16.1         | 16.0         | 13.5         | 13.0         | 13.2         | 14.0         |
| New Orleans.....      | 14.0         | 14.2         | 14.3         | 13.2         | 14.0         | 14.0         | 14.0         | 14.0         | 14.0         | 12.7         | 10.7         | 11.0         | 10.3         |
| Dallas.....           | 14.0         | 15.0         | 15.0         | 15.0         | 12.8         | 12.4         | 12.3         | 13.0         | 13.0         | 11.0         | 9.4          | 8.5          | 10.2         |
| Butte.....            | 12.2         | 12.8         | 13.3         | 13.4         | 13.1         | 13.0         | 13.0         | 13.0         | 13.0         | 12.4         | 10.0         | 10.0         | 10.0         |
| Denver.....           | 10.0         | 12.0         | 11.9         | 11.2         | 12.0         | 12.0         | 12.0         | 12.0         | 11.0         | 10.0         | 10.0         | 10.0         | 10.0         |
| Salt Lake City.....   | 8.8          | 10.1         | 9.8          | 10.6         | 10.3         | 10.5         | 10.0         | 10.0         | 10.0         | 9.9          | 9.0          | 8.8          | 10.0         |
| Seattle.....          | 12.6         | 12.5         | 10.8         | 12.2         | 12.6         | 12.0         | 11.7         | 12.2         | 11.0         | 10.7         | 9.6          | 9.7          | 10.2         |
| Portland, Oreg.....   | 11.5         | 12.2         | 11.2         | 11.4         | 12.0         | 11.9         | 12.0         | 12.0         | 12.6         | 10.4         | 9.1          | 9.0          | 10.2         |
| Los Angeles.....      | 14.2         | 15.0         | 15.5         | 14.9         | 15.0         | 15.0         | 15.0         | 15.0         | 14.6         | 12.6         | 10.5         | 10.7         | 10.8         |
| San Francisco.....    | 12.6         | 12.8         | 14.0         | 14.0         | 14.0         | 14.0         | 14.0         | 14.0         | 14.0         | 11.8         | 12.0         | 11.3         | 12.0         |

<sup>1</sup> Dealers' selling prices per quart, delivered to homes.

Bureau of Agricultural Economics; compiled from reports of the Bureau secured through the cooperation of milk distributors, producers' associations, and municipal officers.

TABLE 399.—*Butterfat: Average price per pound received by producers, United States, 1925-34*

| Year      | Jan. 15      | Feb. 15      | Mar. 15      | Apr. 15      | May 15       | June 15      | July 15      | Aug. 15      | Sept. 15     | Oct. 15      | Nov. 15      | Dec. 15      | Weighted average |
|-----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------------------|
|           | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i>     |
| 1925..... | 40.6         | 37.9         | 41.5         | 40.5         | 40.3         | 33.9         | 40.5         | 41.3         | 42.6         | 47.1         | 47.8         | 47.6         | 41.9             |
| 1926..... | 45.2         | 43.1         | 42.9         | 40.4         | 39.1         | 39.3         | 38.6         | 38.6         | 40.5         | 42.4         | 44.8         | 47.9         | 41.3             |
| 1927..... | 46.9         | 46.8         | 48.0         | 47.1         | 43.6         | 40.8         | 40.3         | 39.4         | 41.0         | 44.4         | 45.8         | 47.8         | 43.7             |
| 1928..... | 48.5         | 46.0         | 46.5         | 45.4         | 44.4         | 43.5         | 43.3         | 44.3         | 45.5         | 47.0         | 47.6         | 49.2         | 45.6             |
| 1929..... | 47.6         | 47.8         | 48.3         | 46.5         | 45.4         | 43.6         | 43.4         | 43.3         | 44.8         | 45.6         | 43.5         | 41.0         | 45.2             |
| 1930..... | 36.7         | 35.4         | 34.9         | 37.3         | 36.5         | 31.6         | 31.6         | 35.2         | 37.7         | 37.0         | 35.3         | 30.6         | 34.5             |
| 1931..... | 26.2         | 25.0         | 27.5         | 26.4         | 21.2         | 20.5         | 21.1         | 23.9         | 26.6         | 30.3         | 28.2         | 27.3         | 24.8             |
| 1932..... | 22.8         | 19.8         | 19.5         | 17.8         | 16.3         | 14.6         | 14.4         | 17.5         | 17.6         | 17.8         | 18.4         | 21.1         | 17.9             |
| 1933..... | 18.9         | 15.8         | 15.1         | 16.5         | 20.2         | 19.7         | 23.0         | 18.4         | 19.6         | 20.1         | 20.4         | 18.0         | 18.8             |
| 1934..... | 16.1         | 21.6         | 23.5         | 21.0         | 21.5         | 22.2         | 22.1         | 24.3         | 24.0         | 24.3         | 27.2         | 28.2         | 22.7             |

Bureau of Agricultural Economics. Quotations include some purchases other than for the manufacture of butter. Based on reports of special price reporters. Monthly prices, by States, weighted by number of milk cows Jan. 1, to obtain a price for the United States; yearly price obtained by weighting State yearly average by estimated volume sold, 1929-34. Data for earlier years in 1928 Yearbook, table 465. Only monthly prices are comparable.

TABLE 400.—*Creamery butter: Production in factories, United States, 1924-33*

| Year      | Jan.             | Feb.             | Mar.             | Apr.             | May              | June             | July             | Aug.             | Sept.            | Oct.             | Nov.             | Dec.             | Total            |
|-----------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|           | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> |
| 1924..... | 87,468           | 86,731           | 95,760           | 106,012          | 139,954          | 161,992          | 164,443          | 137,836          | 115,102          | 100,536          | 77,282           | 82,964           | 1,356,080        |
| 1925..... | 87,121           | 80,218           | 92,302           | 107,023          | 145,478          | 164,253          | 158,920          | 136,738          | 108,325          | 104,520          | 85,492           | 91,186           | 1,361,528        |
| 1926..... | 97,893           | 94,222           | 112,432          | 121,049          | 155,912          | 178,276          | 159,554          | 133,294          | 116,732          | 103,068          | 88,481           | 90,853           | 1,451,766        |
| 1927..... | 97,965           | 95,522           | 111,451          | 126,416          | 168,808          | 188,792          | 170,484          | 146,308          | 113,546          | 102,899          | 86,058           | 88,247           | 1,496,495        |
| 1928..... | 101,045          | 99,394           | 111,777          | 118,849          | 156,294          | 181,037          | 167,601          | 145,430          | 119,499          | 105,894          | 87,745           | 92,484           | 1,487,049        |
| 1929..... | 103,519          | 99,963           | 114,404          | 138,684          | 174,341          | 192,869          | 185,317          | 152,192          | 123,582          | 118,116          | 97,186           | 101,884          | 1,597,027        |
| 1930..... | 108,382          | 102,252          | 115,679          | 133,271          | 184,355          | 189,788          | 167,559          | 137,420          | 122,580          | 120,247          | 101,974          | 111,694          | 1,595,231        |
| 1931..... | 118,354          | 109,596          | 126,792          | 145,387          | 183,733          | 194,256          | 161,296          | 140,395          | 120,936          | 126,569          | 117,035          | 123,073          | 1,667,452        |
| 1932..... | 124,320          | 124,894          | 133,095          | 141,741          | 186,607          | 190,644          | 163,370          | 149,625          | 127,388          | 121,819          | 109,790          | 120,841          | 1,694,132        |
| 1933..... | 130,245          | 122,322          | 133,266          | 138,306          | 191,098          | 201,969          | 176,829          | 166,562          | 140,038          | 130,454          | 115,215          | 116,384          | 1,762,688        |

Bureau of Agricultural Economics. Compiled from reports of factories made direct to the Bureau. Figures beginning with the year 1929 are the most complete since these reports were inaugurated in 1918. Some allowance, therefore, should be made for this when comparing production since 1929 with that of previous years. Data for earlier years in 1928 Yearbook, table 461.

TABLE 401.—*Creamery butter<sup>1</sup> production in factories, by States, average 1927-31, annual 1932 and 1933*

| State                     | Average<br>1927-31      | 1932                    | 1933                    | State                 | Average<br>1927-31      | 1932                    | 1933                    |
|---------------------------|-------------------------|-------------------------|-------------------------|-----------------------|-------------------------|-------------------------|-------------------------|
|                           | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> |                       | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> |
| Maine.....                | 283                     | 50                      | 39                      | Kentucky.....         | 19,034                  | 19,868                  | 22,029                  |
| New Hampshire.....        | 35                      |                         |                         | Tennessee.....        | 16,239                  | 16,518                  | 17,433                  |
| Vermont.....              | 4,594                   | 2,455                   | 2,383                   | Alabama.....          | 1,676                   | 2,637                   | 2,404                   |
| Massachusetts.....        | 1,922                   | 1,193                   | 1,263                   | Mississippi.....      | 7,195                   | 8,506                   | 7,855                   |
| Rhode Island.....         | 53                      | 15                      | 12                      | E. South Central..... | 44,144                  | 47,529                  | 49,721                  |
| Connecticut.....          | 414                     | 333                     | 321                     | Arkansas.....         | 2,142                   | 5,205                   | 5,499                   |
| New England.....          | 7,301                   | 4,046                   | 4,018                   | Louisiana.....        | 765                     | 1,885                   | 1,879                   |
| New York.....             | 10,825                  | 9,777                   | 14,096                  | Oklahoma.....         | 25,282                  | 35,156                  | 39,280                  |
| New Jersey.....           | 47                      | 37                      | 13                      | Texas.....            | 25,352                  | 34,948                  | 36,543                  |
| Pennsylvania.....         | 11,211                  | 11,086                  | 11,615                  | W. South Central..... | 53,541                  | 77,194                  | 83,201                  |
| Middle Atlantic.....      | 22,083                  | 20,900                  | 25,724                  | Wyoming.....          | 2,168                   | 2,316                   | 2,464                   |
| Ohio.....                 | 79,274                  | 81,140                  | 83,076                  | Colorado.....         | 21,809                  | 21,974                  | 23,909                  |
| Indiana.....              | 63,357                  | 75,507                  | 78,508                  | New Mexico.....       | 687                     | 927                     | 952                     |
| Illinois.....             | 64,917                  | 70,433                  | 68,106                  | Idaho.....            | 24,235                  | 28,559                  | 29,420                  |
| Michigan.....             | 68,051                  | 78,609                  | 78,637                  | Arizona.....          | 2,172                   | 2,484                   | 1,822                   |
| Wisconsin.....            | 159,672                 | 170,399                 | 157,933                 | Utah.....             | 10,896                  | 12,638                  | 12,754                  |
| E. North Central.....     | 435,271                 | 476,068                 | 465,260                 | Nevada.....           | 2,119                   | 1,857                   | 1,846                   |
| Minnesota.....            | 279,216                 | 281,659                 | 299,872                 | Montana.....          | 16,293                  | 14,182                  | 14,795                  |
| Iowa.....                 | 204,668                 | 219,531                 | 239,125                 | Mountain.....         | 80,379                  | 84,937                  | 87,962                  |
| Missouri.....             | 74,326                  | 81,702                  | 86,138                  | Washington.....       | 31,820                  | 35,612                  | 34,146                  |
| North Dakota.....         | 39,337                  | 49,336                  | 50,799                  | Oregon.....           | 24,451                  | 29,029                  | 27,308                  |
| South Dakota.....         | 38,109                  | 39,700                  | 43,393                  | California.....       | 73,527                  | 73,322                  | 76,194                  |
| Nebraska.....             | 92,059                  | 85,660                  | 93,361                  | Pacific.....          | 129,798                 | 137,963                 | 137,648                 |
| Kansas.....               | 58,261                  | 74,587                  | 81,969                  | Total.....            | 1,569,861               | 1,694,132               | 1,762,688               |
| W. North Central.....     | 785,976                 | 832,175                 | 894,657                 |                       |                         |                         |                         |
| Delaware.....             | 43                      | 56                      | 55                      |                       |                         |                         |                         |
| Maryland.....             | 160                     | 61                      | 784                     |                       |                         |                         |                         |
| District of Columbia..... |                         |                         |                         |                       |                         |                         |                         |
| Virginia.....             | 5,762                   | 6,060                   | 5,910                   |                       |                         |                         |                         |
| West Virginia.....        | 364                     | 440                     | 454                     |                       |                         |                         |                         |
| North Carolina.....       | 2,040                   | 2,305                   | 2,878                   |                       |                         |                         |                         |
| South Carolina.....       | 473                     | 924                     | 948                     |                       |                         |                         |                         |
| Georgia.....              | 2,378                   | 2,638                   | 3,247                   |                       |                         |                         |                         |
| Florida.....              | 148                     | 316                     | 221                     |                       |                         |                         |                         |
| South Atlantic.....       | 11,368                  | 13,300                  | 14,497                  |                       |                         |                         |                         |

<sup>1</sup> Includes whey butter.

Bureau of Agricultural Economics; the compilations are made from reports of factories to the Bureau.

TABLE 402.—*Butter: Receipts, gross weight,<sup>1</sup> at 5 markets, 1919-34*

| Year      | New<br>York             | Chicago                 | Phila-<br>delphia       | Boston                  | San<br>Fran-<br>cisco   | Year      | New<br>York             | Chicago                 | Phila-<br>delphia       | Boston                  | San<br>Fran-<br>cisco   |
|-----------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-----------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|           | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> |           | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> |
| 1919..... | 226,698                 | 185,779                 | 51,191                  | 73,223                  | 19,683                  | 1927..... | 261,322                 | 235,200                 | 81,727                  | 84,617                  | 26,709                  |
| 1920..... | 164,608                 | 176,746                 | 48,630                  | 72,998                  | 24,412                  | 1928..... | 260,593                 | 230,514                 | 84,495                  | 87,324                  | 24,032                  |
| 1921..... | 213,978                 | 193,593                 | 53,926                  | 74,303                  | 25,264                  | 1929..... | 265,760                 | 244,632                 | 87,886                  | 81,183                  | 25,155                  |
| 1922..... | 241,604                 | 213,101                 | 64,551                  | 80,473                  | 27,778                  | 1930..... | 268,070                 | 233,638                 | 83,762                  | 72,455                  | 24,738                  |
| 1923..... | 243,764                 | 225,892                 | 68,598                  | 82,659                  | 25,620                  | 1931..... | 274,218                 | 243,695                 | 90,585                  | 77,200                  | 26,692                  |
| 1924..... | 248,759                 | 258,083                 | 76,731                  | 86,921                  | 26,260                  | 1932..... | 282,520                 | 223,428                 | 92,243                  | 81,984                  | 28,750                  |
| 1925..... | 244,127                 | 254,308                 | 72,064                  | 82,476                  | 28,680                  | 1933..... | 290,499                 | 261,001                 | 92,387                  | 88,275                  | 29,017                  |
| 1926..... | 252,742                 | 236,546                 | 79,345                  | 83,243                  | 27,686                  | 1934..... | 263,266                 | 228,241                 | 88,947                  | 90,535                  | 27,585                  |

<sup>1</sup> Gross weight includes container and wrapping.

Bureau of Agricultural Economics; compiled from reports of Bureau representatives in the various markets.

TABLE 403.—*Butter: Receipts, gross weight,<sup>1</sup> at 5 markets, by months, 1932-34, and total, 1925-34*

| Market and year | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | July         | Aug.         | Sept.        | Oct.         | Nov.         | Dec.         | Total        |
|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                 | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. |
| New York:       |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1932.....       | 23,243       | 24,212       | 24,878       | 22,382       | 30,222       | 32,237       | 25,276       | 24,220       | 19,090       | 18,235       | 18,550       | 20,275       | 282,520      |
| 1933.....       | 25,238       | 21,009       | 23,828       | 21,215       | 27,824       | 29,189       | 26,896       | 27,328       | 20,892       | 23,173       | 22,111       | 22,246       | 290,449      |
| 1934.....       | 22,696       | 18,711       | 22,960       | 21,109       | 25,838       | 24,407       | 24,609       | 24,058       | 21,025       | 22,555       | 17,510       | 17,778       | 263,256      |
| Chicago:        |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1932.....       | 18,318       | 16,639       | 17,281       | 18,006       | 22,876       | 27,561       | 22,981       | 19,750       | 16,493       | 14,392       | 13,913       | 15,218       | 223,428      |
| 1933.....       | 15,779       | 15,097       | 16,821       | 16,905       | 25,017       | 31,627       | 27,308       | 26,966       | 26,888       | 21,100       | 18,979       | 18,514       | 261,001      |
| 1934.....       | 13,919       | 13,413       | 16,770       | 16,005       | 23,974       | 27,919       | 25,666       | 23,695       | 20,045       | 18,281       | 15,621       | 12,933       | 228,241      |
| Philadelphia:   |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1932.....       | 7,217        | 8,151        | 7,875        | 7,848        | 9,838        | 10,322       | 7,085        | 6,568        | 6,538        | 6,603        | 7,264        | 6,934        | 92,243       |
| 1933.....       | 8,307        | 7,680        | 8,717        | 8,061        | 9,682        | 9,554        | 7,129        | 7,773        | 6,582        | 6,063        | 6,350        | 6,459        | 92,387       |
| 1934.....       | 7,976        | 6,790        | 8,467        | 7,469        | 8,438        | 8,507        | 8,054        | 7,792        | 6,794        | 6,689        | 5,789        | 6,212        | 88,947       |
| Boston:         |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1932.....       | 5,984        | 5,947        | 6,090        | 6,714        | 9,020        | 9,952        | 8,543        | 7,762        | 5,974        | 4,880        | 5,843        | 5,275        | 81,984       |
| 1933.....       | 6,664        | 5,860        | 6,892        | 7,009        | 9,022        | 10,388       | 9,293        | 8,611        | 6,436        | 6,041        | 5,421        | 6,641        | 88,275       |
| 1934.....       | 6,292        | 6,523        | 7,657        | 6,869        | 9,261        | 9,150        | 9,310        | 8,799        | 7,055        | 7,638        | 5,928        | 6,053        | 90,555       |
| San Francisco:  |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1932.....       | 2,013        | 2,022        | 2,390        | 2,995        | 3,597        | 3,157        | 2,628        | 2,107        | 1,840        | 2,019        | 1,664        | 2,318        | 28,750       |
| 1933.....       | 2,305        | 1,691        | 2,375        | 1,955        | 3,072        | 3,133        | 2,871        | 2,628        | 2,223        | 1,936        | 2,199        | 2,629        | 29,017       |
| 1934.....       | 1,724        | 1,454        | 2,072        | 2,700        | 3,040        | 3,276        | 2,634        | 2,060        | 1,742        | 2,065        | 2,860        | 1,955        | 27,585       |
| Total:          |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1925.....       | 44,825       | 41,785       | 48,351       | 50,035       | 67,454       | 83,024       | 82,918       | 68,341       | 53,303       | 51,599       | 42,099       | 42,993       | 681,727      |
| 1926.....       | 46,809       | 46,809       | 54,646       | 53,990       | 64,653       | 89,993       | 81,053       | 59,849       | 62,985       | 45,280       | 40,588       | 42,825       | 679,480      |
| 1927.....       | 44,756       | 45,502       | 53,633       | 57,298       | 75,535       | 89,773       | 79,670       | 68,055       | 60,055       | 45,425       | 39,895       | 39,978       | 639,575      |
| 1928.....       | 50,095       | 47,797       | 54,300       | 52,158       | 63,582       | 81,318       | 75,901       | 64,531       | 52,481       | 48,907       | 42,796       | 43,092       | 676,958      |
| 1929.....       | 52,490       | 48,557       | 53,979       | 56,881       | 73,879       | 81,180       | 79,442       | 64,103       | 51,972       | 50,246       | 44,739       | 46,643       | 704,116      |
| 1930.....       | 50,875       | 47,966       | 55,180       | 59,127       | 74,504       | 82,334       | 72,662       | 52,334       | 47,744       | 45,528       | 43,118       | 51,291       | 682,663      |
| 1931.....       | 53,340       | 50,529       | 57,011       | 62,633       | 72,275       | 86,676       | 83,326       | 52,659       | 60,083       | 51,242       | 52,486       | 55,130       | 712,390      |
| 1932.....       | 56,775       | 56,971       | 58,214       | 57,945       | 75,553       | 83,229       | 86,513       | 60,407       | 49,935       | 46,199       | 47,234       | 50,020       | 708,125      |
| 1933.....       | 58,293       | 51,337       | 58,133       | 55,145       | 74,617       | 83,921       | 73,497       | 73,306       | 63,018       | 58,313       | 55,060       | 56,489       | 761,929      |
| 1934.....       | 52,607       | 46,861       | 57,928       | 54,152       | 70,551       | 73,259       | 70,273       | 66,404       | 56,664       | 57,228       | 47,708       | 44,931       | 698,564      |

<sup>1</sup> Gross weight includes container and wrapping.

Bureau of Agricultural Economics; compiled from reports of Bureau representatives in the various markets.

TABLE 404.—*Creamery butter: Cold-storage holdings,<sup>1</sup> United States, 1925-34*

| Year      | Jan. 1       | Feb. 1       | Mar. 1       | Apr. 1       | May 1        | June 1       | July 1       | Aug. 1       | Sept. 1      | Oct. 1       | Nov. 1       | Dec. 1       |
|-----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|           | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. |
| 1925..... | 65,694       | 45,748       | 28,789       | 10,875       | 3,739        | 13,036       | 63,687       | 109,075      | 128,403      | 114,172      | 94,916       | 74,754       |
| 1926..... | 52,785       | 39,381       | 26,313       | 17,392       | 17,527       | 30,561       | 86,897       | 131,152      | 138,151      | 125,342      | 100,871      | 64,381       |
| 1927..... | 34,347       | 17,952       | 7,952        | 3,044        | 3,436        | 25,404       | 89,996       | 145,147      | 163,701      | 147,396      | 118,679      | 83,224       |
| 1928..... | 46,289       | 28,273       | 14,404       | 5,716        | 5,109        | 15,952       | 69,750       | 120,437      | 136,175      | 128,071      | 105,811      | 70,985       |
| 1929..... | 43,783       | 24,747       | 11,910       | 5,532        | 5,883        | 28,369       | 91,962       | 151,621      | 168,952      | 158,541      | 138,405      | 111,650      |
| 1930..... | 81,935       | 60,230       | 46,530       | 30,558       | 22,957       | 50,378       | 106,522      | 145,061      | 143,089      | 131,489      | 109,646      | 88,012       |
| 1931..... | 63,401       | 46,792       | 30,672       | 18,010       | 17,195       | 35,155       | 89,172       | 115,121      | 104,678      | 80,152       | 56,229       | 42,242       |
| 1932..... | 26,643       | 22,506       | 15,243       | 9,094        | 10,394       | 29,160       | 84,269       | 110,247      | 107,259      | 89,490       | 66,828       | 37,207       |
| 1933..... | 22,043       | 17,833       | 11,580       | 9,255        | 9,398        | 35,159       | 106,378      | 150,934      | 175,476      | 174,713      | 160,463      | 138,166      |
| 1934..... | 111,249      | 75,995       | 36,853       | 15,351       | 11,838       | 27,161       | 70,148       | 108,748      | 120,467      | 125,047      | 111,073      | 81,034       |

<sup>1</sup> Quantities given are net weights.<sup>2</sup> Amounts of butter purchased by the Federal Surplus Relief Corporation are included in these figures for year 1934.

Bureau of Agricultural Economics; compiled from reports made by cold-storage establishments. Data for earlier years in 1928 Yearbook, table 462.

TABLE 405.—*Butter: Receipts, gross weight,<sup>1</sup> at 5 markets, by State of origin, 1930-34*

| Market and origin   | 1930             | 1931             | 1932             | 1933             | 1934             | Market and origin  | 1930             | 1931             | 1932             | 1933             | 1934             |
|---------------------|------------------|------------------|------------------|------------------|------------------|--------------------|------------------|------------------|------------------|------------------|------------------|
| <b>NEW YORK</b>     | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <b>PHILA.—con.</b> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> |
| Ala.-----           | 159              | 110              | 67               | 1                | -----            | Kans.-----         | 70               | 387              | 729              | 303              | 412              |
| Ark-----            | 153              | 224              | 26               | 129              | -----            | Ky-----            | 111              | 365              | 520              | 778              | 937              |
| Calif-----          | 82               | 48               | 33               | -----            | 193              | Md-----            | 72               | 41               | 3                | 143              | 258              |
| Ga-----             | 137              | 120              | 181              | 2                | 1                | Mich-----          | 1,342            | 3,029            | 335              | 174              | 91               |
| Ill-----            | 34,307           | 35,186           | 20,198           | 15,778           | 19,170           | Minn-----          | 52,743           | 50,864           | 56,149           | 55,563           | 48,204           |
| Ind-----            | 4,799            | 5,106            | 5,494            | 5,633            | 5,482            | Miss-----          | 268              | 365              | 1,366            | 280              | 69               |
| Iowa-----           | 74,630           | 74,145           | 83,428           | 83,752           | 79,305           | Mo-----            | 1,767            | 3,115            | 3,511            | 2,975            | 2,383            |
| Kans-----           | 7,512            | 7,136            | 12,066           | 15,582           | 10,394           | Nebr-----          | 2,824            | 4,083            | 4,333            | 6,292            | 7,780            |
| Ky-----             | 573              | 549              | 933              | 870              | 922              | N. Y-----          | 694              | 869              | 255              | 122              | 1,277            |
| Md-----             | 240              | 15               | 23               | -----            | 107              | N. C-----          | 148              | 77               | 108              | 14               | 34               |
| Mass-----           | 87               | 206              | 74               | -----            | 107              | Ohio-----          | 1,554            | 1,261            | 1,230            | 962              | 594              |
| Mich-----           | 8,802            | 12,691           | 7,317            | 7,666            | 5,439            | Pa-----            | 626              | 656              | 624              | 356              | 323              |
| Minn-----           | 65,883           | 62,081           | 75,812           | 82,537           | 68,284           | S. Dak-----        | 215              | 401              | 736              | 1,030            | 206              |
| Miss-----           | 623              | 795              | 40               | 872              | 476              | Tenn-----          | 1,667            | 973              | 1,294            | 1,272            | 330              |
| Mo-----             | 4,845            | 5,582            | 5,856            | 5,850            | 5,413            | Tex-----           | 222              | 842              | 1,456            | 1,098            | 518              |
| Mont-----           | 337              | 28               | -----            | 5                | 28               | Va-----            | 665              | 990              | 776              | 1,040            | 900              |
| Nebr-----           | 26,825           | 29,877           | 33,197           | 33,871           | 37,235           | W. Va-----         | 55               | 66               | 18               | 71               | 216              |
| N. J-----           | 1                | 112              | 381              | 30               | -----            | Wis-----           | 5,395            | 4,185            | 3,210            | 3,288            | 4,255            |
| N. Y-----           | 7,119            | 4,837            | 2,373            | 4,757            | 5,159            | Other States-----  | 188              | 640              | 1,451            | 1,349            | 2,180            |
| N. C-----           | 215              | 53               | 28               | 9                | 1                | Canada-----        | 24               | -----            | -----            | -----            | -----            |
| N. Dak-----         | 2,514            | 5,798            | 5,767            | 4,613            | 2,964            | <b>Total..</b>     | <b>83,762</b>    | <b>90,585</b>    | <b>92,243</b>    | <b>92,387</b>    | <b>88,947</b>    |
| Ohio-----           | 6,925            | 7,155            | 5,890            | 7,576            | 6,849            | <b>BOSTON</b>      |                  |                  |                  |                  |                  |
| Okla-----           | 771              | 1,417            | 2,767            | 1,928            | 898              | Colo-----          | 83               | 129              | -----            | 15               | 50               |
| Pa-----             | 1,982            | 1,850            | 2,047            | 1,426            | 1,315            | Ill-----           | 12,065           | 13,493           | 12,535           | 12,460           | 13,766           |
| S. Dak-----         | 1,151            | 984              | 1,570            | 2,251            | 1,389            | Ind-----           | 2,842            | 2,917            | 2,951            | 2,197            | 2,308            |
| Tenn-----           | 2,465            | 1,614            | 1,501            | 815              | 735              | Iowa-----          | 4,397            | 3,173            | 3,690            | 6,896            | 11,778           |
| Tex-----            | 995              | 930              | 1,877            | 2,318            | 1,246            | Kans-----          | 796              | 587              | 518              | 802              | 1,530            |
| Va-----             | 244              | 273              | 221              | 354              | 633              | Ky-----            | 222              | 47               | 104              | 125              | 117              |
| Wash-----           | 29               | 26               | 32               | 63               | 105              | Mass-----          | 3                | 99               | 113              | 210              | 47               |
| Wis-----            | 13,917           | 14,503           | 13,110           | 11,692           | 8,909            | Mich-----          | 993              | 1,279            | 1,073            | 698              | 434              |
| Other States-----   | 201              | 165              | 128              | 369              | 497              | Minn-----          | 29,119           | 32,719           | 25,627           | 30,917           | 27,492           |
| Canada-----         | 47               | 600              | 83               | -----            | -----            | Mo-----            | 2,408            | 2,224            | 3,345            | 4,127            | 4,752            |
| <b>Total..</b>      | <b>263,070</b>   | <b>274,218</b>   | <b>282,520</b>   | <b>290,449</b>   | <b>263,256</b>   | Mont-----          | 237              | 87               | -----            | -----            | -----            |
| <b>CHICAGO</b>      |                  |                  |                  |                  |                  | Nebr-----          | 7,438            | 4,746            | 4,756            | 4,547            | 4,576            |
| Ark-----            | 118              | 229              | 966              | 1,656            | 1,559            | N. H-----          | 2                | 5                | 3                | -----            | 164              |
| Colo-----           | 780              | 242              | 126              | 761              | 369              | N. Y-----          | 1,208            | 1,954            | 483              | 542              | 164              |
| Idaho-----          | 27               | -----            | 76               | 285              | -----            | N. Dak-----        | 880              | 1,868            | 7,716            | 8,178            | 7,091            |
| Ill-----            | 15,594           | 20,061           | 19,274           | 17,846           | 16,832           | Ohio-----          | 2,942            | 4,267            | 3,614            | 3,297            | 3,635            |
| Ind-----            | 1,217            | 1,375            | 3,821            | 5,620            | 4,226            | Okla-----          | 540              | 964              | 1,927            | 1,979            | 2,342            |
| Iowa-----           | 39,606           | 42,450           | 35,898           | 46,621           | 41,231           | Pa-----            | 81               | 250              | 45               | -----            | 26               |
| Kans-----           | 9,928            | 15,283           | 20,271           | 25,954           | 20,751           | S. Dak-----        | 1,911            | 2,562            | 6,067            | 5,453            | 3,909            |
| Ky-----             | 1,353            | 989              | 397              | 1,321            | 114              | Tenn-----          | 119              | 143              | -----            | -----            | -----            |
| Mich-----           | 876              | 877              | 1,551            | 5,924            | 4,957            | Tex-----           | 251              | 461              | 460              | 293              | 317              |
| Minn-----           | 46,380           | 39,550           | 25,534           | 27,362           | 24,746           | Vt-----            | 185              | 154              | 71               | 126              | 14               |
| Miss-----           | 143              | 290              | 352              | 441              | 35               | Wis-----           | 3,292            | 2,885            | 5,853            | 5,242            | 5,682            |
| Mo-----             | 12,487           | 14,866           | 16,068           | 18,481           | 15,871           | Other States-----  | 441              | 192              | 433              | 170              | 205              |
| Mont-----           | 159              | 3                | 25               | 60               | 180              | <b>Total..</b>     | <b>72,455</b>    | <b>77,200</b>    | <b>81,984</b>    | <b>88,275</b>    | <b>90,535</b>    |
| Nebr-----           | 16,225           | 15,136           | 13,918           | 18,281           | 14,833           | <b>SAN FRAN-</b>   |                  |                  |                  |                  |                  |
| N. Y-----           | 107              | 28               | 9                | 41               | 17               | <b>CISCO</b>       |                  |                  |                  |                  |                  |
| N. Dak-----         | 2,384            | 3,053            | 1,720            | 2,244            | 3,134            | Calif-----         | 18,110           | 18,473           | 20,510           | 20,483           | 18,287           |
| Ohio-----           | 251              | 607              | 128              | 114              | 84               | Colo-----          | 93               | 144              | 159              | 400              | 590              |
| Okla-----           | 3,104            | 4,507            | 6,763            | 6,931            | 4,023            | Idaho-----         | 1,223            | 1,615            | 965              | 1,835            | 463              |
| S. Dak-----         | 13,496           | 12,555           | 10,666           | 15,045           | 11,243           | Mont-----          | 2,018            | 1,424            | 1,199            | 1,107            | 1,021            |
| Tenn-----           | 75               | 31               | 107              | 479              | 85               | Nebr-----          | 87               | 37               | 252              | 61               | 641              |
| Tex-----            | 1,483            | 2,920            | 4,079            | 5,050            | 1,238            | Nev-----           | 184              | 14               | 26               | 53               | 19               |
| Wis-----            | 68,047           | 68,190           | 61,009           | 60,227           | 62,413           | Oreg-----          | 2,459            | 3,687            | 4,712            | 4,201            | 4,794            |
| Other States-----   | 96               | 153              | 70               | 287              | 250              | Utah-----          | 35               | 38               | 231              | 282              | 189              |
| <b>Total..</b>      | <b>233,638</b>   | <b>243,695</b>   | <b>223,428</b>   | <b>261,001</b>   | <b>228,241</b>   | Wash-----          | 495              | 1,340            | 543              | 529              | 504              |
| <b>PHILADELPHIA</b> |                  |                  |                  |                  |                  | Other States-----  | 4                | 29               | 153              | 66               | 1,077            |
| Ala-----            | 17               | 103              | 164              | -----            | 1                | <b>Total..</b>     | <b>24,738</b>    | <b>26,692</b>    | <b>28,750</b>    | <b>29,017</b>    | <b>27,585</b>    |
| Ill-----            | 4,632            | 9,166            | 4,455            | 2,751            | 4,046            |                    |                  |                  |                  |                  |                  |
| Ind-----            | 1,647            | 1,298            | 1,412            | 2,208            | 2,760            |                    |                  |                  |                  |                  |                  |
| Iowa-----           | 6,220            | 6,825            | 8,083            | 10,318           | 11,172           |                    |                  |                  |                  |                  |                  |

<sup>1</sup> Gross weight includes container and wrapping.

Bureau of Agricultural Economics; compiled from reports of Bureau representatives in the various markets.

TABLE 406.—*Butter, 92-score creamery: Average wholesale price per pound, at 5 leading markets, 1925-34*

| Market and year | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | July         | Aug.         | Sept.        | Oct.         | Nov.         | Dec.         | Average      |
|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| New York:       | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> |
| 1925            | 39.94        | 40.82        | 47.51        | 44.54        | 42.58        | 42.49        | 42.86        | 43.45        | 48.18        | 50.88        | 50.66        | 49.20        | 45.26        |
| 1926            | 44.88        | 44.89        | 42.82        | 39.42        | 40.84        | 41.17        | 40.50        | 41.79        | 44.62        | 46.89        | 50.58        | 54.69        | 44.42        |
| 1927            | 49.15        | 51.55        | 50.18        | 50.35        | 43.46        | 42.52        | 41.72        | 41.88        | 46.46        | 45.39        | 49.79        | 51.87        | 47.28        |
| 1928            | 48.76        | 46.62        | 49.44        | 45.49        | 44.93        | 44.13        | 44.93        | 46.94        | 48.75        | 47.79        | 50.57        | 50.46        | 47.40        |
| 1929            | 47.94        | 49.89        | 48.45        | 45.35        | 43.54        | 43.54        | 42.42        | 43.45        | 46.22        | 45.56        | 42.70        | 41.10        | 45.01        |
| 1930            | 36.63        | 35.70        | 37.27        | 38.53        | 34.85        | 32.93        | 35.31        | 38.92        | 39.77        | 39.98        | 36.09        | 32.18        | 36.51        |
| 1931            | 28.50        | 28.40        | 28.88        | 26.10        | 23.70        | 23.33        | 24.95        | 23.12        | 32.50        | 33.76        | 30.93        | 30.55        | 28.21        |
| 1932            | 23.59        | 22.46        | 22.61        | 20.08        | 18.84        | 16.99        | 18.18        | 20.31        | 20.76        | 20.72        | 23.30        | 24.11        | 21.00        |
| 1933            | 19.85        | 18.65        | 18.17        | 20.66        | 22.54        | 22.84        | 24.53        | 21.31        | 23.60        | 24.04        | 23.60        | 20.08        | 21.66        |
| 1934            | 19.84        | 25.35        | 25.35        | 23.60        | 24.49        | 24.88        | 24.49        | 27.38        | 25.78        | 26.93        | 29.36        | 30.95        | 25.70        |
| Chicago:        |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1925            | 38.86        | 40.09        | 47.66        | 42.96        | 40.74        | 42.15        | 42.20        | 41.63        | 46.35        | 49.23        | 49.58        | 47.45        | 44.08        |
| 1926            | 43.01        | 43.09        | 41.53        | 38.33        | 39.43        | 39.13        | 38.51        | 40.12        | 43.09        | 45.93        | 48.90        | 52.54        | 42.80        |
| 1927            | 48.08        | 50.41        | 49.36        | 45.13        | 41.49        | 40.42        | 39.98        | 41.45        | 45.03        | 46.23        | 48.23        | 50.51        | 45.78        |
| 1928            | 46.83        | 45.62        | 48.14        | 43.92        | 43.41        | 42.99        | 43.52        | 45.30        | 47.08        | 46.45        | 48.88        | 49.10        | 46.00        |
| 1929            | 46.59        | 49.22        | 47.63        | 44.14        | 42.06        | 42.38        | 41.31        | 42.50        | 44.93        | 43.96        | 41.31        | 39.32        | 43.78        |
| 1930            | 35.10        | 35.30        | 37.25        | 37.23        | 33.72        | 32.09        | 34.59        | 37.08        | 38.16        | 37.75        | 33.70        | 30.51        | 35.28        |
| 1931            | 27.35        | 27.15        | 28.69        | 24.37        | 22.37        | 22.30        | 23.85        | 27.19        | 30.26        | 32.18        | 29.75        | 29.15        | 27.05        |
| 1932            | 23.02        | 21.63        | 22.05        | 18.98        | 17.11        | 16.29        | 17.71        | 19.43        | 20.03        | 19.79        | 22.10        | 22.67        | 20.77        |
| 1933            | 18.76        | 17.83        | 17.63        | 19.78        | 21.76        | 22.36        | 23.87        | 20.58        | 22.67        | 23.01        | 22.61        | 18.65        | 20.79        |
| 1934            | 19.36        | 24.35        | 24.52        | 22.40        | 23.22        | 24.22        | 23.63        | 26.34        | 24.86        | 25.91        | 29.00        | 28.50        | 24.78        |
| San Francisco:  |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1927            | 47.48        | 47.71        | 45.43        | 42.21        | 41.16        | 41.81        | 41.62        | 44.17        | 46.71        | 48.42        | 48.92        | 48.50        | 45.34        |
| 1928            | 46.36        | 45.20        | 43.41        | 39.88        | 41.70        | 42.98        | 45.62        | 47.59        | 50.26        | 50.92        | 49.20        | 49.74        | 46.08        |
| 1929            | 45.87        | 47.45        | 44.56        | 43.13        | 45.02        | 44.82        | 44.98        | 46.11        | 48.65        | 48.29        | 48.00        | 41.68        | 45.71        |
| 1930            | 36.46        | 37.64        | 37.69        | 38.75        | 36.80        | 34.00        | 33.94        | 37.21        | 38.96        | 37.12        | 34.11        | 33.06        | 36.31        |
| 1931            | 26.19        | 28.48        | 48.23        | 24.35        | 25.34        | 25.00        | 26.17        | 29.63        | 30.54        | 31.88        | 32.00        | 29.70        | 28.13        |
| 1932            | 24.44        | 24.00        | 22.87        | 20.00        | 19.48        | 17.92        | 18.88        | 20.74        | 21.00        | 21.88        | 25.65        | 26.85        | 21.98        |
| 1933            | 20.12        | 18.82        | 19.31        | 20.60        | 22.92        | 23.00        | 24.00        | 21.35        | 20.58        | 20.84        | 22.22        | 19.58        | 21.11        |
| 1934            | 18.75        | 23.84        | 23.37        | 21.16        | 21.10        | 22.50        | 23.12        | 26.50        | 27.66        | 29.04        | 32.74        | 30.86        | 25.05        |
| Philadelphia:   |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1925            | 40.99        | 41.74        | 48.34        | 45.71        | 43.58        | 43.31        | 43.79        | 44.29        | 48.96        | 52.15        | 51.81        | 50.02        | 46.22        |
| 1926            | 45.50        | 45.30        | 43.10        | 40.19        | 41.78        | 42.08        | 41.35        | 42.75        | 45.62        | 47.88        | 51.54        | 55.68        | 45.23        |
| 1927            | 50.04        | 52.09        | 51.13        | 51.29        | 44.29        | 43.21        | 42.64        | 42.91        | 47.46        | 49.39        | 50.72        | 52.87        | 48.17        |
| 1928            | 49.74        | 47.59        | 50.36        | 46.48        | 45.92        | 45.18        | 45.94        | 48.05        | 49.75        | 48.73        | 51.55        | 51.47        | 48.89        |
| 1929            | 48.69        | 50.51        | 49.22        | 46.34        | 44.54        | 44.55        | 43.42        | 44.45        | 47.22        | 46.66        | 43.78        | 42.10        | 45.95        |
| 1930            | 37.66        | 36.48        | 38.10        | 39.53        | 35.87        | 33.94        | 36.32        | 39.92        | 40.78        | 40.96        | 37.11        | 33.17        | 37.49        |
| 1931            | 29.50        | 29.40        | 29.88        | 27.09        | 24.70        | 24.33        | 25.96        | 29.11        | 33.50        | 34.76        | 31.93        | 31.58        | 29.31        |
| 1932            | 24.64        | 23.43        | 23.63        | 21.05        | 19.84        | 17.99        | 19.18        | 21.31        | 21.77        | 21.73        | 24.30        | 25.11        | 22.00        |
| 1933            | 20.88        | 19.65        | 19.09        | 21.62        | 23.51        | 23.59        | 25.51        | 22.29        | 24.60        | 25.04        | 24.40        | 20.85        | 22.69        |
| 1934            | 20.84        | 26.35        | 26.35        | 24.66        | 25.45        | 25.89        | 25.49        | 28.38        | 26.78        | 27.93        | 30.38        | 31.95        | 26.71        |
| Boston:         |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1925            | 40.69        | 41.11        | 47.42        | 45.30        | 42.98        | 43.26        | 43.54        | 43.98        | 47.88        | 50.80        | 50.27        | 49.16        | 45.52        |
| 1926            | 45.25        | 45.35        | 43.26        | 39.96        | 41.16        | 41.56        | 40.88        | 41.87        | 44.72        | 46.54        | 48.38        | 53.69        | 44.39        |
| 1927            | 49.53        | 51.86        | 50.95        | 51.08        | 43.76        | 52.62        | 41.80        | 42.06        | 46.24        | 47.80        | 48.02        | 49.84        | 47.13        |
| 1928            | 48.62        | 46.93        | 49.62        | 46.00        | 45.88        | 44.47        | 45.32        | 47.12        | 48.73        | 47.96        | 50.15        | 50.24        | 47.54        |
| 1929            | 47.87        | 49.98        | 48.85        | 46.22        | 44.02        | 44.06        | 42.77        | 43.98        | 46.47        | 45.69        | 42.85        | 41.36        | 45.34        |
| 1930            | 37.08        | 36.43        | 37.82        | 39.04        | 35.42        | 33.38        | 35.73        | 39.38        | 39.94        | 39.96        | 36.17        | 32.56        | 36.91        |
| 1931            | 29.10        | 28.91        | 29.38        | 26.73        | 24.30        | 23.97        | 25.48        | 23.27        | 32.50        | 34.15        | 31.41        | 31.00        | 28.77        |
| 1932            | 24.41        | 23.33        | 23.19        | 20.65        | 19.15        | 17.64        | 19.02        | 20.77        | 21.25        | 21.21        | 23.75        | 24.71        | 21.59        |
| 1933            | 20.54        | 19.28        | 19.12        | 21.50        | 23.25        | 23.78        | 25.54        | 22.27        | 24.06        | 24.88        | 24.56        | 20.91        | 22.47        |
| 1934            | 20.90        | 26.30        | 26.41        | 24.55        | 25.70        | 25.86        | 25.45        | 28.20        | 26.62        | 27.52        | 29.91        | 31.63        | 26.59        |

Bureau of Agricultural Economics. Compiled from reports of Bureau representatives in the markets. These wholesale prices are based on open-market sales for cash or short-time credit, consideration being given to the prices at which the larger quantities are sold. New York data for earlier years in 1930 Year-book, table 461.



TABLE 407.—*Butter, creamery: Average wholesale<sup>1</sup> price per pound, all scores, by months, New York and Chicago, 1934*

## NEW YORK

| Month          | 93    | 92    | 91    | 90    | 89    | 88    | 87    | Centralizer car-lots |       |       |
|----------------|-------|-------|-------|-------|-------|-------|-------|----------------------|-------|-------|
|                |       |       |       |       |       |       |       | 90                   | 89    | 88    |
| January.....   | 20.59 | 19.84 | 19.60 | 19.49 | 19.12 | 18.73 | 18.21 | 19.49                | 19.12 | 18.72 |
| February.....  | 26.10 | 25.35 | 25.05 | 24.77 | 24.39 | 23.71 | 22.77 | 24.77                | 24.39 | 23.71 |
| March.....     | 26.09 | 25.35 | 25.07 | 24.89 | 24.44 | 23.71 | 22.77 | 24.89                | 24.44 | 23.71 |
| April.....     | 24.41 | 23.66 | 23.42 | 23.33 | 23.02 | 22.58 | 21.94 | 23.33                | 23.02 | 22.58 |
| May.....       | 25.23 | 24.49 | 24.10 | 23.68 | 23.31 | 22.86 | 22.42 | 23.68                | 23.31 | 22.86 |
| June.....      | 25.64 | 24.87 | 24.63 | 24.27 | 23.77 | 23.39 | 22.99 | 24.27                | 23.77 | 23.39 |
| July.....      | 25.24 | 24.49 | 24.14 | 23.81 | 23.25 | 22.86 | 22.42 | 23.81                | 23.25 | 22.86 |
| August.....    | 28.13 | 27.38 | 26.90 | 26.27 | 25.30 | 24.55 | 24.05 | 26.28                | 25.30 | 24.64 |
| September..... | 26.53 | 25.78 | 25.40 | 25.05 | 24.50 | 24.00 | 23.69 | 25.04                | 24.50 | 24.00 |
| October.....   | 27.68 | 26.93 | 26.52 | 25.82 | 25.02 | 24.57 | 24.18 | 25.81                | 25.02 | 24.57 |
| November.....  | 30.13 | 29.36 | 28.89 | 28.10 | 27.39 | 26.86 | 26.36 | 28.10                | 27.39 | 26.86 |
| December.....  | 31.70 | 30.94 | 30.48 | 29.54 | 28.48 | 27.80 | 27.33 | 29.54                | 28.48 | 27.80 |
| Average.....   | 26.46 | 25.70 | 25.35 | 24.92 | 24.33 | 23.91 | 23.38 | 24.92                | 24.33 | 23.91 |

## CHICAGO

|                |       |       |       |       |       |       |       |       |       |       |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| January.....   | 20.06 | 19.36 | 18.96 | 18.69 | 18.34 | 17.96 | 17.27 | 19.12 | 18.62 | 17.90 |
| February.....  | 25.01 | 24.35 | 23.97 | 23.50 | 23.03 | 22.62 | 21.63 | 24.09 | 23.24 | 22.24 |
| March.....     | 25.14 | 24.52 | 24.13 | 23.81 | 23.35 | 22.72 | 22.01 | 24.42 | 23.58 | 22.67 |
| April.....     | 23.10 | 22.40 | 22.14 | 21.96 | 21.67 | 21.36 | 20.80 | 22.33 | 21.78 | 21.35 |
| May.....       | 23.97 | 23.22 | 22.80 | 22.51 | 22.18 | 21.74 | 21.10 | 23.15 | 22.37 | 21.79 |
| June.....      | 24.97 | 24.22 | 23.61 | 23.17 | 22.60 | 22.11 | 21.40 | 24.14 | 23.08 | 22.26 |
| July.....      | 24.38 | 23.63 | 22.86 | 22.55 | 22.91 | 21.30 | 20.50 | 23.71 | 22.34 | 21.44 |
| August.....    | 27.11 | 26.34 | 25.44 | 25.04 | 24.33 | 23.63 | 22.68 | 26.08 | 24.76 | 23.69 |
| September..... | 25.52 | 24.82 | 24.32 | 24.02 | 23.64 | 23.10 | 22.53 | 24.69 | 23.74 | 23.10 |
| October.....   | 26.66 | 25.91 | 25.65 | 25.05 | 24.24 | 23.46 | 22.75 | 25.42 | 24.34 | 23.46 |
| November.....  | 29.75 | 29.00 | 28.73 | 27.23 | 26.24 | 25.45 | 24.72 | 27.36 | 26.35 | 25.49 |
| December.....  | 30.25 | 29.50 | 28.95 | 28.03 | 27.30 | 26.40 | 25.60 | 28.41 | 27.38 | 26.44 |
| Average.....   | 25.49 | 24.77 | 24.30 | 23.80 | 23.24 | 22.64 | 21.92 | 24.41 | 23.46 | 22.65 |

<sup>1</sup> Principally sales by first-hand receivers to jobbers, chain stores, or other large distributors, in less than carload lots, except as otherwise indicated.

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TABLE 408.—*Butter: Average export price per pound in Copenhagen, Denmark, 1925-34*

| Year      | Jan.  | Feb.  | Mar.  | Apr.  | May   | June  | July  | Aug.  | Sept. | Oct.  | Nov.  | Dec.  | Average |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
|           | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents   |
| 1925..... | 42.0  | 45.4  | 46.1  | 38.9  | 36.9  | 39.4  | 40.5  | 44.2  | 45.7  | 46.5  | 44.6  | 37.8  | 42.5    |
| 1926..... | 36.5  | 40.2  | 38.8  | 36.2  | 34.8  | 35.7  | 35.4  | 36.1  | 36.6  | 36.3  | 34.9  | 37.1  | 36.6    |
| 1927..... | 36.4  | 39.3  | 36.8  | 35.2  | 32.9  | 33.2  | 32.2  | 35.0  | 36.6  | 39.4  | 41.2  | 38.0  | 36.6    |
| 1928..... | 35.4  | 37.5  | 40.0  | 36.8  | 35.4  | 34.9  | 36.4  | 38.0  | 40.2  | 39.5  | 40.6  | 42.4  | 38.1    |
| 1929..... | 39.1  | 39.0  | 35.5  | 32.8  | 33.4  | 34.9  | 35.3  | 35.6  | 39.7  | 40.5  | 38.7  | 35.8  | 36.7    |
| 1930..... | 34.8  | 35.3  | 31.7  | 27.4  | 26.3  | 27.7  | 30.3  | 29.2  | 29.9  | 30.1  | 27.2  | 27.3  | 29.8    |
| 1931..... | 26.4  | 29.5  | 27.0  | 24.3  | 23.3  | 23.3  | 23.2  | 24.5  | 24.2  | 21.2  | 19.6  | 18.3  | 23.8    |
| 1932..... | 18.7  | 19.8  | 16.3  | 15.6  | 13.6  | 13.2  | 14.8  | 14.0  | 15.7  | 14.7  | 14.5  | 13.7  | 15.2    |
| 1933..... | 12.2  | 12.3  | 11.0  | 10.8  | 11.9  | 12.2  | 14.8  | 16.2  | 19.0  | 18.1  | 21.0  | 19.1  | 14.9    |
| 1934..... | 14.3  | 14.8  | 15.0  | 13.0  | 13.6  | 13.7  | 14.1  | 18.2  | 18.2  | 18.9  | 21.1  | 21.5  | 16.4    |

Bureau of Agricultural Economics. Compiled from Danish Butter Journal (Smør Tidende) official quotations in kroner per 100 kilograms, as fixed each Thursday by 2 committees, representing dairy and commercial interests respectively. For years 1882-1924, see the 1923 Yearbook, table 450, and 1928 Yearbook, table 467. Converted at monthly average rates of exchange as given in Federal Reserve Bulletin, except for period January 1927-August 1931, when par of exchange was used.

## DAIRY AND POULTRY STATISTICS

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TABLE 409.—*Butter: International trade, average 1925-29, annual 1930-33*

| Country                       | Calendar year   |              |              |              |              |              |              |              |                   |              |
|-------------------------------|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------------|--------------|
|                               | Average 1925-29 |              | 1930         |              | 1931         |              | 1932         |              | 1933 <sup>1</sup> |              |
|                               | Ex-ports        | Im-ports     | Exports      | Im-ports     | Exports      | Imports      | Exports      | Imports      | Ex-ports          | Imports      |
| PRINCIPAL EXPORTING COUNTRIES | 1,000 pounds    | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 pounds      | 1,000 pounds |
| Denmark.....                  | 310, 967        | 1, 886       | 372, 553     | 1, 388       | 378, 423     | 1, 596       | 347, 882     | 923          | 332, 265          | 783          |
| New Zealand.....              | 156, 179        | 6            | 211, 035     | 1            | 222, 719     | 12           | 244, 781     | 1            | 295, 148          | 0            |
| Australia <sup>2</sup> .....  | 100, 464        | 3, 448       | 126, 598     | 4            | 191, 014     | 1            | 229, 055     | 1            |                   |              |
| Netherlands.....              | 100, 310        | 4, 548       | 92, 398      | 4, 306       | 72, 660      | 8, 886       | 44, 922      | 9, 321       | 62, 551           | 1, 449       |
| Russia.....                   | 62, 901         | 0            | 23, 197      | 0            | 68, 023      | 0            | 68, 197      | 0            | 82, 022           | 0            |
| Argentina.....                | 50, 410         | 7            | 51, 156      | 7            | 51, 167      | 6            | 55, 915      | 6            | 30, 659           | 2            |
| Irish Free State.....         | 58, 409         | 6, 215       | 58, 766      | 3, 342       | 42, 307      | 3, 324       | 36, 931      | 2, 632       | 45, 232           | 22           |
| Sweden.....                   | 37, 607         | 133          | 58, 805      | 19           | 43, 045      | 39           | 29, 866      | 32           | 37, 758           | 73           |
| Finland.....                  | 31, 509         | 42           | 37, 726      | 8            | 38, 367      | 0            | 32, 020      | 0            | 26, 201           |              |
| Latvia.....                   | 24, 641         | 29           | 40, 630      | 49           | 41, 311      | 24           | 41, 001      | 1            | 34, 494           | 0            |
| Estonia.....                  | 21, 439         | 6            | 31, 010      | 0            | 31, 844      | 0            | 27, 626      | 0            | 20, 336           | 4            |
| Poland.....                   | 17, 426         | 350          | 26, 713      | 30           | 27, 470      | 32           | 2, 707       | 866          | 3, 547            | 25           |
| France.....                   | 15, 492         | 6, 600       | 10, 722      | 12, 922      | 9, 765       | 40, 837      | 7, 024       | 26, 140      | 6, 829            | 20, 307      |
| Italy.....                    | 4, 043          | 1, 600       | 1, 851       | 3, 130       | 1, 283       | 6, 203       | 827          | 4, 398       | 834               | 4, 698       |
| Yugoslavia.....               | 571             | 2            | 655          | 1            | 668          | 0            | 339          | 2            | 318               | 0            |
| Total.....                    | 992, 368        | 24, 872      | 1, 143, 810  | 25, 297      | 1, 220, 066  | 60, 960      | 1, 169, 093  | 44, 323      | 978, 194          | 27, 363      |
| PRINCIPAL IMPORTING COUNTRIES |                 |              |              |              |              |              |              |              |                   |              |
| United Kingdom.....           | 1, 465          | 647, 350     | 1, 115       | 744, 623     | 869          | 863, 365     | 1, 238       | 902, 601     | 1, 328            | 979, 867     |
| Germany.....                  | 275             | 249, 016     | 578          | 293, 557     | 269          | 220, 946     | 478          | 153, 262     | 19                | 130, 389     |
| Switzerland.....              | 155             | 18, 070      | 40           | 18, 795      | 17           | 23, 359      | 7            | 8, 152       | 2                 | 1, 146       |
| Canada.....                   | 8, 510          | 14, 638      | 1, 180       | 38, 606      | 10, 680      | 2, 821       | 3, 506       | 238          | 4, 437            | 1, 377       |
| Netherlands Indies.....       | 0               | 9, 758       | 0            | 10, 910      | 0            | 11, 787      | 0            | 11, 711      | 0                 | 10, 051      |
| United States.....            | 4, 568          | 6, 227       | 2, 954       | 2, 472       | 1, 984       | 1, 882       | 1, 605       | 1, 014       | 1, 191            | 1, 022       |
| Belgium.....                  | 2, 470          | 5, 856       | 2, 647       | 22, 630      | 2, 756       | 41, 585      | 1, 841       | 46, 928      | 725               | 27, 352      |
| Austria.....                  | 932             | 2, 921       | 4, 111       | 544          | 2, 861       | 1, 565       | 1, 565       | 802          | 2, 606            | 161          |
| Union of South Africa.....    | 839             | 2, 420       | 2, 904       | 1, 690       | 4, 521       | 1, 244       | 4, 328       | 1, 110       | 2, 508            | 2, 640       |
| Egypt.....                    | 53              | 2, 341       | 23           | 2, 935       | 81           | 2, 521       | 389          | 1, 545       | 233               | 1, 816       |
| Algeria.....                  | 48              | 2, 085       | 81           | 3, 432       | 73           | 4, 635       | 2 36         | 3 939        |                   |              |
| Norway.....                   | 421             | 1, 846       | 236          | 1, 529       | 1, 629       | 381          | 2, 429       | 91           | 904               | 146          |
| British Malaya.....           | 187             | 1, 811       | 193          | 2, 067       | 104          | 1, 863       | 108          | 1, 621       | 118               | 1, 585       |
| Cuba.....                     | 5               | 1, 780       | 38           | 448          | 110          | 207          | 41           | 58           |                   |              |
| Peru.....                     | 6               | 1, 708       | 4            | 623          | 2            | 270          | 1            | 211          | 3                 |              |
| China.....                    | 0               | 1, 661       | 0            | 1, 417       | 0            | 1, 468       | 0            | 1, 423       | 0                 | 1, 547       |
| Greece.....                   | 0               | 1, 251       | 1 0          | 1, 420       | 1 1          | 2, 060       | 3 3          | 1, 198       |                   | 604          |
| Philippine Islands.....       | 0               | 1, 200       | 0            | 1, 188       | 0            | 1, 758       | 0            | 1, 336       | 0                 |              |
| Czechoslovakia.....           | 605             | 1, 174       | 694          | 716          | 661          | 4, 107       | 27           | 2, 704       | 110               | 1, 495       |
| Trinidad and Tobago.....      | 0               | 1, 139       | 0            | 1, 058       | 0            | 1, 086       | 0            | 1, 024       | 0                 | 1, 217       |
| Spain.....                    | 328             | 363          | 160          | 328          | 88           | 122          | 45           | 41           | 21                | 15           |
| Total.....                    | 20, 857         | 974, 615     | 16, 958      | 150, 988     | 26, 706      | 1, 189, 032  | 17, 647      | 1, 141, 009  | 14, 205           | 1, 162, 430  |

<sup>1</sup> Preliminary.<sup>2</sup> International Yearbook of Agricultural Statistics.<sup>3</sup> Java and Madura only.<sup>4</sup> Does not include Manchuria after June 30, 1932.

Bureau of Agricultural Economics; official sources except where otherwise noted.

Butter includes all butter made from milk, melted and renovated butter, but does not include margarine or oleomargarine, cocoa butter, or ghee.

TABLE 410.—*Cheese, whole-milk American Cheddar: Production in factories, United States, 1924-33*

| Year | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | July         | Aug.         | Sept.        | Oct.         | Nov.         | Dec.         | Total        |
|------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|      | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. |
| 1924 | 17,718       | 18,886       | 22,955       | 24,597       | 33,657       | 43,517       | 40,716       | 33,602       | 30,539       | 26,210       | 17,252       | 15,046       | 324,695      |
| 1925 | 16,834       | 17,991       | 21,598       | 26,839       | 38,012       | 45,752       | 43,706       | 37,659       | 31,548       | 28,253       | 20,349       | 18,619       | 347,240      |
| 1926 | 19,519       | 19,984       | 25,216       | 29,221       | 38,593       | 46,320       | 40,164       | 33,239       | 28,809       | 23,164       | 16,386       | 15,295       | 335,915      |
| 1927 | 16,660       | 17,085       | 21,318       | 24,533       | 34,704       | 41,489       | 38,195       | 31,944       | 25,783       | 23,012       | 16,717       | 16,337       | 307,777      |
| 1928 | 18,010       | 19,005       | 23,451       | 28,221       | 37,324       | 45,012       | 40,072       | 34,229       | 30,342       | 25,134       | 18,013       | 16,440       | 335,253      |
| 1929 | 19,925       | 19,522       | 24,059       | 30,181       | 42,483       | 51,702       | 48,007       | 37,811       | 30,824       | 25,961       | 19,655       | 20,184       | 370,314      |
| 1930 | 23,666       | 23,031       | 28,502       | 34,143       | 48,545       | 53,887       | 45,582       | 33,555       | 26,705       | 23,581       | 18,781       | 18,838       | 378,816      |
| 1931 | 21,941       | 22,018       | 27,571       | 32,940       | 44,439       | 49,513       | 40,595       | 32,956       | 29,139       | 30,470       | 23,016       | 20,050       | 374,648      |
| 1932 | 20,895       | 21,993       | 25,484       | 29,706       | 41,933       | 48,534       | 40,205       | 34,796       | 31,510       | 29,267       | 23,601       | 22,819       | 370,743      |
| 1933 | 24,877       | 23,898       | 28,571       | 32,356       | 43,564       | 54,653       | 48,206       | 42,857       | 35,620       | 29,864       | 21,016       | 23,179       | 408,631      |

Bureau of Agricultural Economics. Compiled from reports of factories made direct to the Bureau. Figures beginning with the year 1929 are the most complete since these reports were inaugurated in 1918. Some allowance, therefore, should be made for this when comparing production since 1929 with that of previous years. Data for earlier years in 1928 Yearbook, table 468.

TABLE 411.—*Cheese, whole-milk American Cheddar: Production in factories, by States, average 1927-31, annual 1932 and 1933*

| State                    | Average,<br>1927-31 | 1932         | 1933         | State              | Average,<br>1927-31 | 1932         | 1933         |
|--------------------------|---------------------|--------------|--------------|--------------------|---------------------|--------------|--------------|
|                          | 1,000<br>lb.        | 1,000<br>lb. | 1,000<br>lb. |                    | 1,000<br>lb.        | 1,000<br>lb. | 1,000<br>lb. |
| Vermont                  | 709                 | 132          | 386          | South Atlantic     | 753                 | 845          | 677          |
| Other New England States | 97                  | 76           | 60           | Tennessee          | 1,626               | 2,386        | 2,686        |
| New England              | 806                 | 206          | 446          | Others             | 4,761               | 8,523        | 10,946       |
| New York                 | 27,519              | 22,586       | 26,286       | East South Central | 6,387               | 10,909       | 13,632       |
| New Jersey               | 61                  |              |              | West South Central | 2,986               | 11,363       | 15,615       |
| Pennsylvania             | 1,732               | 1,301        | 1,828        | Wyoming            | 2,120               | 1,514        | 1,374        |
| Middle Atlantic          | 29,312              | 23,887       | 28,114       | Idaho              | 7,127               | 6,087        | 5,106        |
| Ohio                     | 902                 | 1,355        | 1,939        | Utah               | 2,716               | 8,156        | 4,493        |
| Indiana                  | 7,909               | 14,417       | 16,042       | Montana            | 1,765               | 1,886        | 1,990        |
| Illinois                 | 4,498               | 8,529        | 10,345       | Others             | 2,566               | 2,171        | 2,279        |
| Michigan                 | 7,077               | 6,495        | 8,932        | Mountain           | 16,294              | 14,814       | 15,242       |
| Wisconsin                | 236,257             | 227,751      | 238,692      | Washington         | 4,332               | 7,783        | 7,524        |
| East North Central       | 256,643             | 258,547      | 275,950      | Oregon             | 13,114              | 15,532       | 15,251       |
| Minnesota                | 9,043               | 7,578        | 8,892        | California         | 4,653               | 8,130        | 11,936       |
| Iowa                     | 803                 | 1,016        | 1,833        | Pacific            | 22,099              | 31,445       | 34,711       |
| Missouri                 | 2,779               | 8,551        | 4,584        | Total              | 353,362             | 370,743      | 408,631      |
| Others                   | 5,457               | 6,580        | 9,335        |                    |                     |              |              |
| West North Central       | 18,082              | 18,725       | 24,244       |                    |                     |              |              |

Bureau of Agricultural Economics. The compilations are made from reports of factories to the Bureau.

TABLE 412.—*Cheese: Receipts, gross weight,<sup>1</sup> at 5 markets, 1919-34*

| Year | New York     | Chicago      | Philadelphia | Boston       | San Francisco | Year | New York     | Chicago      | Philadelphia | Boston       | San Francisco |
|------|--------------|--------------|--------------|--------------|---------------|------|--------------|--------------|--------------|--------------|---------------|
|      | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb.  |      | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb.  |
| 1919 | 65,045       | 81,019       | 21,392       | 17,722       | 12,089        | 1927 | 46,937       | 123,633      | 20,396       | 14,588       | 12,694        |
| 1920 | 47,004       | 81,597       | 16,966       | 12,967       | 10,203        | 1928 | 48,272       | 97,264       | 21,039       | 17,362       | 12,676        |
| 1921 | 51,981       | 85,846       | 20,982       | 18,208       | 9,632         | 1929 | 50,911       | 80,823       | 19,973       | 14,899       | 12,293        |
| 1922 | 50,109       | 107,724      | 19,324       | 13,521       | 9,157         | 1930 | 52,165       | 58,866       | 21,167       | 16,882       | 15,119        |
| 1923 | 49,425       | 128,645      | 18,363       | 15,914       | 11,690        | 1931 | 56,005       | 41,555       | 20,949       | 17,240       | 12,907        |
| 1924 | 42,959       | 130,024      | 16,866       | 13,725       | 11,482        | 1932 | 61,195       | 42,804       | 22,031       | 16,593       | 14,349        |
| 1925 | 46,163       | 131,120      | 19,095       | 15,314       | 11,355        | 1933 | 59,850       | 36,889       | 23,280       | 17,680       | 14,506        |
| 1926 | 45,363       | 115,104      | 19,454       | 15,437       | 12,530        | 1934 | 69,293       | 32,880       | 24,515       | 19,422       | 13,648        |

<sup>1</sup> Gross weight includes container and wrapping.

Bureau of Agricultural Economics. Compiled from reports of Bureau representatives in the various markets.

TABLE 413.—*Cheese: Receipts, gross weight,<sup>1</sup> at 5 markets, by months, 1932-34, and total, 1925-34*

| Market and year | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | July         | Aug.         | Sept.        | Oct.         | Nov.         | Dec.         | Total        |
|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                 | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. |
| New York:       |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1932-----       | 4,996        | 5,158        | 4,611        | 3,945        | 5,134        | 5,702        | 6,590        | 5,850        | 4,626        | 4,887        | 4,902        | 4,794        | 61,195       |
| 1933-----       | 4,338        | 4,106        | 5,041        | 4,904        | 6,509        | 5,209        | 6,539        | 4,728        | 4,760        | 5,027        | 4,088        | 4,551        | 59,850       |
| 1934-----       | 6,426        | 5,207        | 3,844        | 3,806        | 6,748        | 5,959        | 7,354        | 7,080        | 5,294        | 6,851        | 6,353        | 4,371        | 69,293       |
| Chicago:        |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1932-----       | 3,177        | 3,284        | 3,178        | 3,201        | 3,723        | 4,061        | 3,942        | 4,065        | 3,635        | 4,230        | 3,170        | 3,138        | 42,804       |
| 1933-----       | 2,959        | 2,663        | 3,222        | 3,235        | 3,603        | 3,818        | 3,433        | 2,985        | 2,611        | 2,949        | 2,623        | 2,738        | 36,889       |
| 1934-----       | 2,816        | 2,995        | 2,053        | 2,384        | 2,960        | 3,173        | 3,543        | 3,593        | 2,997        | 2,504        | 2,279        | 1,577        | 32,880       |
| Philadelphia:   |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1932-----       | 1,434        | 1,629        | 1,521        | 1,618        | 2,221        | 2,498        | 1,973        | 2,094        | 1,969        | 1,590        | 2,134        | 1,400        | 22,081       |
| 1933-----       | 1,566        | 1,918        | 2,250        | 2,267        | 2,840        | 2,009        | 2,203        | 1,909        | 1,728        | 1,794        | 1,729        | 1,282        | 23,280       |
| 1934-----       | 2,184        | 1,908        | 1,657        | 1,992        | 2,638        | 2,346        | 2,069        | 2,708        | 2,006        | 1,759        | 2,032        | 1,668        | 24,815       |
| Boston:         |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1932-----       | 1,045        | 1,142        | 1,286        | 1,093        | 1,241        | 1,881        | 2,013        | 1,477        | 1,495        | 1,263        | 1,294        | 1,363        | 16,593       |
| 1933-----       | 1,097        | 975          | 1,306        | 1,113        | 1,425        | 1,633        | 2,354        | 1,392        | 1,892        | 1,706        | 1,553        | 1,229        | 17,680       |
| 1934-----       | 1,563        | 1,388        | 1,269        | 972          | 1,667        | 1,791        | 2,517        | 2,018        | 1,407        | 2,079        | 1,802        | 949          | 19,422       |
| San Francisco:  |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1932-----       | 710          | 862          | 1,163        | 908          | 1,653        | 1,588        | 1,974        | 1,869        | 1,046        | 1,359        | 1,005        | 712          | 14,340       |
| 1933-----       | 808          | 720          | 906          | 1,210        | 1,659        | 1,320        | 2,289        | 1,642        | 1,180        | 1,053        | 773          | 946          | 14,506       |
| 1934-----       | 799          | 968          | 1,115        | 1,399        | 1,060        | 1,123        | 1,004        | 1,858        | 1,136        | 1,084        | 1,143        | 959          | 13,648       |
| Total:          |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1925-----       | 15,202       | 12,845       | 14,898       | 15,436       | 18,529       | 24,025       | 25,825       | 24,176       | 20,520       | 21,029       | 17,059       | 14,012       | 223,556      |
| 1926-----       | 14,853       | 13,568       | 15,055       | 15,531       | 14,972       | 21,777       | 21,973       | 20,736       | 18,784       | 18,699       | 15,954       | 15,986       | 207,888      |
| 1927-----       | 12,707       | 14,916       | 14,956       | 16,922       | 21,301       | 22,134       | 24,134       | 22,556       | 21,522       | 18,996       | 14,278       | 13,288       | 218,243      |
| 1928-----       | 14,409       | 13,715       | 14,654       | 15,139       | 16,253       | 19,216       | 21,741       | 18,728       | 18,222       | 18,665       | 14,179       | 11,692       | 196,613      |
| 1929-----       | 13,781       | 13,877       | 12,261       | 12,331       | 16,750       | 18,406       | 20,548       | 18,605       | 15,289       | 14,343       | 11,829       | 10,787       | 178,899      |
| 1930-----       | 12,526       | 12,466       | 12,904       | 13,026       | 15,473       | 17,895       | 17,435       | 14,953       | 14,510       | 12,225       | 10,783       | 10,303       | 164,199      |
| 1931-----       | 11,600       | 10,461       | 11,717       | 11,445       | 12,145       | 17,480       | 14,190       | 14,264       | 11,948       | 13,588       | 10,569       | 8,304        | 148,666      |
| 1932-----       | 11,362       | 12,075       | 11,759       | 10,765       | 13,972       | 15,730       | 16,492       | 14,855       | 12,771       | 13,329       | 12,505       | 11,407       | 157,022      |
| 1933-----       | 10,768       | 9,982        | 12,725       | 12,729       | 16,036       | 13,989       | 16,923       | 12,656       | 12,171       | 12,709       | 10,771       | 10,746       | 152,205      |
| 1934-----       | 13,788       | 12,366       | 9,938        | 10,553       | 15,029       | 14,392       | 16,487       | 17,257       | 12,840       | 14,277       | 13,609       | 9,522        | 160,058      |

<sup>1</sup> Gross weight includes container and wrapping.

Bureau of Agricultural Economics; compiled from reports of Bureau representatives in the various markets.

See 1927 Yearbook, table 443; 1931 Yearbook, table 474, and 1934 Yearbook, table 411, for data for earlier years.

TABLE 414.—*Cheese, American, and all varieties: Cold-storage holdings,<sup>1</sup> United States, 1925-34*AMERICAN <sup>2</sup>

| Year      | Jan. 1       | Feb. 1       | Mar. 1       | Apr. 1       | May 1        | June 1       | July 1       | Aug. 1       | Sept. 1      | Oct. 1       | Nov. 1       | Dec. 1       |
|-----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|           | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. |
| 1925----- | 49,187       | 41,552       | 34,647       | 27,716       | 26,147       | 29,550       | 46,468       | 66,634       | 76,512       | 78,632       | 71,913       | 66,495       |
| 1926----- | 58,457       | 50,339       | 42,587       | 38,041       | 35,597       | 39,340       | 54,069       | 73,681       | 81,297       | 77,646       | 72,491       | 65,881       |
| 1927----- | 56,758       | 48,106       | 41,383       | 37,188       | 34,332       | 37,710       | 52,085       | 69,119       | 71,825       | 67,402       | 60,766       | 55,140       |
| 1928----- | 49,914       | 43,837       | 38,189       | 33,294       | 32,177       | 39,203       | 56,386       | 75,862       | 86,632       | 84,745       | 85,126       | 77,258       |
| 1929----- | 71,177       | 60,772       | 52,665       | 48,175       | 44,933       | 50,721       | 66,640       | 88,914       | 90,863       | 89,797       | 83,737       | 76,699       |
| 1930----- | 68,930       | 58,972       | 53,208       | 46,507       | 43,239       | 53,403       | 74,986       | 99,773       | 92,093       | 90,152       | 83,674       | 75,736       |
| 1931----- | 67,599       | 58,516       | 52,304       | 45,277       | 44,792       | 46,764       | 63,156       | 79,699       | 78,740       | 70,940       | 69,611       | 66,033       |
| 1932----- | 60,804       | 54,360       | 47,106       | 42,009       | 38,951       | 40,461       | 53,622       | 68,667       | 66,721       | 68,555       | 66,813       | 62,392       |
| 1933----- | 57,749       | 53,532       | 46,992       | 41,625       | 37,321       | 41,336       | 67,450       | 82,771       | 94,394       | 99,320       | 95,831       | 85,146       |
| 1934----- | 77,773       | 65,476       | 54,934       | 49,856       | 52,217       | 58,073       | 79,525       | 97,018       | 103,805      | 108,624      | 102,832      | 96,688       |

## ALL VARIETIES

|           |        |        |        |        |        |        |        |         |         |         |         |         |
|-----------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|
| 1925----- | 67,558 | 58,461 | 50,117 | 40,480 | 39,037 | 42,838 | 61,992 | 83,568  | 95,472  | 97,777  | 90,866  | 84,561  |
| 1926----- | 76,649 | 67,531 | 58,175 | 51,285 | 47,450 | 52,167 | 68,771 | 90,053  | 98,473  | 95,385  | 89,785  | 81,034  |
| 1927----- | 74,217 | 64,216 | 56,073 | 49,835 | 47,461 | 52,748 | 69,302 | 89,965  | 92,280  | 87,080  | 79,334  | 72,428  |
| 1928----- | 66,184 | 57,906 | 50,263 | 44,710 | 43,761 | 51,477 | 71,353 | 92,482  | 104,224 | 101,251 | 100,229 | 92,903  |
| 1929----- | 88,832 | 77,024 | 67,087 | 61,223 | 57,569 | 64,177 | 83,627 | 102,077 | 110,314 | 107,831 | 100,558 | 92,503  |
| 1930----- | 86,075 | 74,523 | 67,281 | 59,928 | 56,940 | 72,353 | 95,221 | 113,923 | 112,061 | 108,767 | 101,148 | 91,775  |
| 1931----- | 83,288 | 73,488 | 66,177 | 57,711 | 57,422 | 60,242 | 77,989 | 89,264  | 91,284  | 88,564  | 87,866  | 84,035  |
| 1932----- | 78,818 | 70,682 | 60,962 | 54,021 | 50,764 | 52,118 | 66,531 | 76,327  | 79,847  | 81,406  | 78,274  | 73,916  |
| 1933----- | 68,714 | 63,321 | 55,731 | 48,806 | 43,628 | 48,481 | 78,715 | 94,291  | 103,853 | 113,131 | 109,655 | 99,019  |
| 1934----- | 91,970 | 78,789 | 67,819 | 62,153 | 65,450 | 71,469 | 96,960 | 115,842 | 122,495 | 127,363 | 118,008 | 109,972 |

<sup>1</sup> Quantities given are net weight.<sup>2</sup> The term "American cheese" is intended to cover only those varieties known as "twins," "flats," "daisies," "Cheddars," "longhorns," and "square prints." It does not, therefore, include all kinds of cheese made in the United States.

Bureau of Agricultural Economics; compiled from reports made by cold-storage establishments.

Changes in these tables made due to transference of current trading stocks to cold-storage stocks from Jan. 1, 1927, to Dec. 1, 1931. Data for earlier years in 1928 Yearbook, table 472.

TABLE 415.—*Cheese: Receipts, gross weight,<sup>1</sup> at 5 markets, by State of origin, 1930-34*

| Market and origin   | 1930             | 1931             | 1932             | 1933             | 1934             | Market and origin        | 1930             | 1931             | 1932             | 1933             | 1934             |
|---------------------|------------------|------------------|------------------|------------------|------------------|--------------------------|------------------|------------------|------------------|------------------|------------------|
| <b>NEW YORK</b>     | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <b>PHILADELPHIA—con.</b> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i> |
| Ill.                | 6,145            | 7,288            | 9,196            | 10,957           | 13,365           | Wis.                     | 15,966           | 15,945           | 17,888           | 18,078           | 20,794           |
| Ind.                | 1,084            | 1,539            | 1,074            | 770              | 1,788            | Other States             | 60               | 237              | —                | 2                | —                |
| Iowa                | 84               | 26               | 122              | 85               | 103              | Canada                   | —                | —                | —                | —                | —                |
| Mass.               | 93               | 68               | 22               | 22               | 15               | <b>Total</b>             | <b>21,167</b>    | <b>20,949</b>    | <b>22,081</b>    | <b>23,280</b>    | <b>24,815</b>    |
| Mich.               | 844              | 704              | 1,377            | 1,366            | 1,129            | <b>CHICAGO</b>           |                  |                  |                  |                  |                  |
| Minn.               | 329              | 266              | 285              | 1,100            | 488              | Calif.                   | 37               | 45               | 2                | 2                | 3                |
| Mo.                 | 13               | 30               | 94               | 132              | 215              | Colo.                    | 22               | 12               | 10               | 23               | 69               |
| Neb.                | 45               | 115              | 63               | 78               | 1                | Ill.                     | 1,853            | 943              | 4,213            | 3,658            | 4,510            |
| N. Y.               | 69               | 8                | 3                | 15               | 3                | Ind.                     | 396              | 139              | 41               | 100              | 277              |
| N. Y.               | 10,886           | 8,294            | 7,289            | 5,782            | 5,313            | Iowa                     | 98               | 76               | 43               | 61               | 4                |
| Ohio                | 617              | 576              | 592              | 496              | 269              | Kans.                    | 39               | 27               | 4                | 40               | 10               |
| Pa.                 | 496              | 146              | 100              | 92               | 34               | Mich.                    | 246              | 49               | 93               | 92               | 27               |
| Vt.                 | 43               | (?)              | 6                | 43               | 479              | Minn.                    | 1,751            | 1,132            | 733              | 1,351            | 343              |
| Va.                 | —                | (?)              | (?)              | 184              | —                | Mo.                      | 24               | 20               | 33               | 111              | —                |
| Wis.                | 28,835           | 35,456           | 40,657           | 37,806           | 45,305           | Mont.                    | 10               | 1                | —                | —                | —                |
| Other States        | 204              | 78               | 87               | 443              | 487              | N. J.                    | 319              | 879              | 156              | 82               | 228              |
| Canada              | 2,427            | 1,411            | 228              | 509              | 299              | N. Y.                    | 2,857            | 1,323            | 3,203            | 2,571            | 2,589            |
| <b>Total</b>        | <b>52,165</b>    | <b>56,005</b>    | <b>61,195</b>    | <b>59,850</b>    | <b>69,293</b>    | Ohio                     | 136              | 9                | 46               | 51               | 79               |
| <b>BOSTON</b>       |                  |                  |                  |                  |                  | Pa.                      | 60               | 23               | 55               | 22               | 74               |
| Ill.                | 1,387            | 1,404            | 784              | 691              | 1,031            | S. Dak.                  | 16               | 28               | 19               | 76               | —                |
| Ind.                | 382              | 348              | 216              | 40               | 106              | Tex.                     | 5                | 59               | 31               | 3                | 1                |
| Maine               | (?)              | (?)              | 1                | (?)              | 1                | Wis.                     | 49,447           | 36,424           | 33,796           | 28,267           | 24,353           |
| Mass.               | 38               | 25               | 2                | (?)              | 142              | Other States             | 683              | 333              | 326              | 248              | 251              |
| Mich.               | 132              | 396              | 273              | 352              | —                | Canada                   | 867              | 33               | —                | 131              | 62               |
| N. H.               | 5                | 1                | 12               | (?)              | —                | <b>Total</b>             | <b>58,866</b>    | <b>41,555</b>    | <b>42,804</b>    | <b>36,889</b>    | <b>32,880</b>    |
| N. Y.               | 2,349            | 2,310            | 2,226            | 3,024            | 2,737            | <b>SAN FRANCISCO</b>     |                  |                  |                  |                  |                  |
| Ohio                | 12               | 76               | 33               | 11               | 19               | Calif.                   | 4,213            | 3,110            | 3,233            | 3,489            | 4,068            |
| Pa.                 | 60               | 1                | 2                | 131              | 55               | Colo.                    | 165              | 129              | 81               | 115              | 156              |
| Vt.                 | 113              | 54               | 53               | —                | 50               | Idaho                    | 3,413            | 2,907            | 1,781            | 2,203            | 1,929            |
| Wis.                | 9,492            | 11,746           | 12,825           | 13,074           | 14,997           | Ill.                     | 221              | (?)              | 33               | 71               | 109              |
| Other States        | 2,010            | 876              | 163              | 356              | 260              | Mont.                    | 1                | —                | —                | (?)              | 5                |
| Canada              | 2                | 8                | 3                | 1                | 24               | N. Y.                    | 784              | 687              | 337              | 400              | 404              |
| <b>Total</b>        | <b>16,882</b>    | <b>17,240</b>    | <b>16,593</b>    | <b>17,680</b>    | <b>19,422</b>    | Oreg.                    | 5,427            | 5,093            | 6,568            | 5,524            | 4,858            |
| <b>PHILADELPHIA</b> |                  |                  |                  |                  |                  | Utah                     | 28               | —                | 9                | 38               | —                |
| Ill.                | 2,091            | 1,880            | 2,512            | 2,462            | 2,770            | Wash.                    | 13               | 34               | 94               | 69               | 278              |
| Ind.                | 34               | 146              | 4                | 1                | 47               | Wis.                     | 759              | 904              | 2,210            | 3,542            | 1,799            |
| Iowa                | 4                | 3                | 5                | 6                | 24               | Other States             | 95               | 43               | 3                | 55               | 42               |
| Mich.               | 655              | 668              | 75               | 777              | 350              | <b>Total</b>             | <b>15,119</b>    | <b>12,907</b>    | <b>14,349</b>    | <b>14,506</b>    | <b>13,648</b>    |
| Minn.               | 34               | 285              | 799              | 936              | 435              |                          |                  |                  |                  |                  |                  |
| N. Y.               | 2,281            | 1,688            | 979              | 974              | 335              |                          |                  |                  |                  |                  |                  |
| N. Dak.             | —                | —                | 2                | —                | —                |                          |                  |                  |                  |                  |                  |
| Ohio                | 1                | 10               | 66               | 22               | 49               |                          |                  |                  |                  |                  |                  |
| Pa.                 | 91               | 87               | 51               | 22               | 11               |                          |                  |                  |                  |                  |                  |

<sup>1</sup> Gross weight includes container and wrapping.<sup>2</sup> Not over 500 pounds.

Bureau of Agricultural Economics. Compiled from reports of Bureau representatives in the various markets.

TABLE 416.—*Cheese, No. 1 American, fresh single daisies: Average wholesale price per pound, New York, by months, 1925-34*

| Year | Jan.         | Feb.            | Mar.         | Apr.         | May          | June         | July         | Aug.         | Sept.        | Oct.         | Nov.         | Dec.         | Average         |
|------|--------------|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-----------------|
|      | <i>Cents</i> | <i>Cents</i>    | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i>    |
| 1925 | 24           | 24              | 24           | 24           | 24           | 24           | 24           | 24           | 24           | 25           | 25           | 25           | 24              |
| 1926 | 26           | 25              | 23           | 21           | 21           | 21           | 22           | 22           | 23           | 24           | 25           | 26           | 23              |
| 1927 | 26           | 26              | 25           | 24           | 24           | 24           | 24           | 25           | 27           | 28           | 27           | 29           | 26              |
| 1928 | —            | <sup>1</sup> 25 | 25           | 24           | 24           | 26           | 26           | 26           | 27           | 26           | 25           | 25           | <sup>2</sup> 25 |
| 1929 | 25           | 24              | 24           | 24           | 23           | 23           | 23           | 23           | 24           | 24           | 24           | 23           | 24              |
| 1930 | 21           | 21              | 21           | 21           | 20           | 18           | 18           | 19           | 20           | 19           | 19           | 18           | 20              |
| 1931 | 17           | 16              | 16           | 15           | 14           | 14           | 15           | 16           | 17           | 16           | 15           | 14           | 15              |
| 1932 | 13           | 13              | 13           | 12           | 12           | 11           | 12           | 14           | 14           | 13           | 13           | 13           | 13              |
| 1933 | 12           | 11              | 11           | 12           | 15           | 15           | 16           | 14           | 13           | 13           | 13           | 12           | 13              |
| 1934 | 13           | 16              | 15           | 13           | 14           | 15           | 13           | 15           | 14           | 14           | 15           | 15           | 14              |

<sup>1</sup> Less than 10 quotations during month.<sup>2</sup> Based on 11 months' quotations.

Bureau of Agricultural Economics; compiled from reports of Bureau representatives in the market. These wholesale prices are based upon open market sales made for cash or short-time credit, consideration being given to the prices at which the larger quantities are sold.

TABLE 417.—*Cheese: International trade, average 1925-29, annual 1930-33*

| Country                            | Calendar year      |                  |                  |                 |                  |                 |                  |                 |                   |                    |
|------------------------------------|--------------------|------------------|------------------|-----------------|------------------|-----------------|------------------|-----------------|-------------------|--------------------|
|                                    | Average 1925-29    |                  | 1930             |                 | 1931             |                 | 1932             |                 | 1933 <sup>1</sup> |                    |
|                                    | Ex-ports           | Im-ports         | Ex-ports         | Im-ports        | Ex-ports         | Im-ports        | Ex-ports         | Im-ports        | Ex-ports          | Im-ports           |
| PRINCIPAL EXPORT-<br>ING COUNTRIES | 1,000<br>pounds    | 1,000<br>pounds  | 1,000<br>pounds  | 1,000<br>pounds | 1,000<br>pounds  | 1,000<br>pounds | 1,000<br>pounds  | 1,000<br>pounds | 1,000<br>pounds   | 1,000<br>pounds    |
| Netherlands.....                   | 198,043            | 1,292            | 206,735          | 1,509           | 190,457          | 1,346           | 170,059          | 1,075           | 140,899           | 808                |
| New Zealand.....                   | 171,975            | 4                | 203,054          | 7               | 183,271          | 5               | 200,528          | 2               | 222,090           | 5                  |
| Canada.....                        | 120,608            | 3,419            | 80,164           | 1,788           | 84,788           | 1,446           | 86,940           | 1,167           | 74,169            | 968                |
| Italy.....                         | 76,435             | 9,818            | 80,973           | 12,562          | 88,947           | 10,115          | 66,397           | 8,806           | 52,561            | 9,952              |
| Switzerland.....                   | 64,236             | 3,538            | 66,143           | 4,238           | 54,305           | 8,470           | 43,700           | 4,756           | 45,347            | 3,779              |
| Denmark.....                       | 14,740             | 972              | 12,626           | 808             | 9,383            | 603             | 14,635           | 129             | 22,219            | 78                 |
| Czechoslovakia.....                | 7,843              | 2,450            | 8,274            | 2,961           | 10,980           | 3,781           | 6,123            | 3,071           | 2,824             | 2,917              |
| Australia <sup>2</sup> .....       | 6,724              | 1,212            | 7,263            | 154             | 7,412            | 24              | 8,801            | 60              | -----             | -----              |
| Finland.....                       | 5,951              | 42               | 4,682            | 35              | 5,777            | 34              | 7,225            | 26              | 9,207             | -----              |
| Yugoslavia.....                    | 4,787              | 318              | 4,583            | 297             | 4,197            | 243             | 2,616            | 150             | 3,229             | 70                 |
| Bulgaria.....                      | 2,150              | 18               | 2,466            | 5               | 3,141            | 5               | 2,601            | 4               | 2,579             | 0                  |
| Hungary.....                       | 1,870              | 1,720            | 1,846            | 955             | 920              | 496             | 693              | 65              | 482               | 35                 |
| Russia.....                        | <sup>3</sup> 1,390 | <sup>3</sup> 110 | 697              | 0               | 110              | 0               | 123              | 0               | 62                | 0                  |
| Total.....                         | 676,750            | 24,913           | 679,506          | 25,319          | 643,688          | 26,568          | 610,341          | 19,311          | 575,668           | 18,612             |
| PRINCIPAL IMPORT-<br>ING COUNTRIES |                    |                  |                  |                 |                  |                 |                  |                 |                   |                    |
| United Kingdom.....                | 4,509              | 331,101          | 5,579            | 345,227         | 4,047            | 319,916         | 4,011            | 333,118         | 3,482             | 387,779            |
| Germany.....                       | 3,311              | 149,025          | 5,411            | 137,458         | 7,372            | 120,403         | 4,237            | 108,686         | 3,875             | 90,922             |
| United States.....                 | 4,350              | 75,680           | 1,964            | 68,311          | 1,673            | 61,991          | 1,408            | 55,623          | 1,281             | 48,397             |
| Belgium.....                       | 1,173              | 38,709           | 875              | 52,049          | 813              | 49,590          | 554              | 45,779          | 349               | 48,386             |
| France.....                        | 31,257             | 37,037           | 32,694           | 55,036          | 28,824           | 69,560          | 24,536           | 43,904          | 25,034            | 46,106             |
| Algeria.....                       | 220                | 7,496            | 218              | 10,463          | 194              | 11,346          | 151              | 11,103          | 139               | 10,775             |
| Spain.....                         | 89                 | 7,109            | 207              | 5,835           | 237              | 3,866           | 239              | 2,481           | 169               | 2,490              |
| Austria.....                       | 1,769              | 7,056            | 4,494            | 5,630           | 6,233            | 5,791           | 3,981            | 3,703           | 4,735             | 2,094              |
| Egypt.....                         | 152                | 6,870            | 121              | 7,494           | 129              | 7,315           | 298              | 5,247           | 125               | 6,172              |
| Guba.....                          | 5                  | 4,764            | 10               | 2,367           | 7                | 1,378           | 5                | 744             | -----             | 731                |
| Greece.....                        | 40                 | 3,942            | <sup>3</sup> 301 | 2,301           | <sup>3</sup> 189 | 3,959           | <sup>3</sup> 619 | 1,754           | -----             | 399                |
| Argentina.....                     | 861                | 3,681            | 744              | 3,777           | 1,055            | 1,659           | 1,470            | 470             | 2,075             | 789                |
| Irish Free State.....              | 271                | 2,587            | 169              | 2,350           | 174              | 2,689           | 34               | 2,226           | -----             | 346                |
| Netherlands Indies.....            | 0                  | 1,881            | 0                | 2,161           | 0                | 2,107           | 0                | 2,047           | 0                 | <sup>3</sup> 1,729 |
| Mexico.....                        | 126                | 1,808            | 56               | 1,230           | 23               | 688             | 5                | 487             | 4                 | 506                |
| Brazil.....                        | 0                  | 1,472            | 0                | 1,246           | 1                | 575             | 0                | 363             | 0                 | 359                |
| Sweden.....                        | 474                | 1,405            | 550              | 1,473           | 102              | 1,691           | 258              | 1,044           | 730               | 1,016              |
| Tunis.....                         | 21                 | 1,347            | 28               | 1,764           | 24               | 1,943           | 14               | 2,070           | 58                | 2,730              |
| British India.....                 | 6                  | 1,231            | 7                | 1,148           | 6                | 899             | 4                | 969             | 3                 | 1,086              |
| Norway.....                        | 925                | 1,191            | 1,880            | 749             | 2,905            | 562             | 3,644            | 240             | 3,819             | 195                |
| Union of South<br>Africa.....      | 342                | 530              | 1,954            | 450             | 2,186            | 303             | 2,364            | 379             | 1,238             | 394                |
| Total.....                         | 49,901             | 685,902          | 56,762           | 709,025         | 56,194           | 668,231         | 47,832           | 2,437           | 47,116            | 602,612            |

<sup>1</sup> Preliminary.<sup>2</sup> International Yearbook of Agricultural Statistics.<sup>3</sup> Java and Madura only.

Bureau of Agricultural Economics; official sources except where otherwise noted. All cheese made from milk, including "cottage cheese".

TABLE 418.—*Oleomargarine: Production and apparent consumption in the United States, 1924-25 to 1933-34*

| Year beginning July | Production      |                 |                 | Stocks begin-<br>ning of<br>year | Exports         | Stocks<br>end of<br>year | Apparent con-<br>sumption |               |
|---------------------|-----------------|-----------------|-----------------|----------------------------------|-----------------|--------------------------|---------------------------|---------------|
|                     | Colored         | Uncol-<br>ored  | Total           |                                  |                 |                          | Total                     | Per<br>capita |
|                     | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds                  | 1,000<br>pounds | 1,000<br>pounds          | 1,000<br>pounds           | Pounds        |
| 1924-25.....        | 11,280          | 204,123         | 215,403         | 2,607                            | 887             | 2,720                    | 214,403                   | 1.87          |
| 1925-26.....        | 13,181          | 234,866         | 248,047         | 2,720                            | 1,256           | 2,942                    | 245,599                   | 2.12          |
| 1926-27.....        | 14,502          | 242,655         | 257,157         | 2,942                            | 942             | 3,289                    | 255,558                   | 2.17          |
| 1927-28.....        | 15,851          | 279,345         | 295,196         | 3,299                            | 732             | 3,187                    | 294,079                   | 2.46          |
| 1928-29.....        | 16,306          | 316,816         | 333,122         | 3,187                            | 333             | 4,191                    | 331,485                   | 2.74          |
| 1929-30.....        | 17,103          | 332,021         | 349,124         | 4,191                            | 931             | 4,694                    | 347,690                   | 2.84          |
| 1930-31.....        | 8,847           | 268,926         | 277,773         | 4,694                            | 604             | 2,494                    | 279,389                   | 2.26          |
| 1931-32.....        | 4,636           | 210,706         | 215,342         | 2,494                            | 553             | 2,615                    | 214,663                   | 1.72          |
| 1932-33.....        | 2,813           | 216,230         | 219,043         | 2,615                            | 316             | 2,786                    | 218,556                   | 1.75          |
| 1933-34.....        | 2,689           | 240,498         | 243,187         | 2,786                            | 537             | 2,732                    | 242,704                   | 1.98          |

Bureau of Agricultural Economics. Production and stocks from reports of the Bureau of Internal Revenue. Exports from reports of the Bureau of Foreign and Domestic Commerce. See 1927 Yearbook, table 448, for data for earlier years.

TABLE 419.—*Oleomargarine: Materials used in manufacture, 1924-25 to 1933-34*

| Material            | Year beginning July     |                         |                         |                         |                         |                         |                         |                         |                         |                         |
|---------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|                     | 1924-25                 | 1925-26                 | 1926-27                 | 1927-28                 | 1928-29                 | 1929-30                 | 1930-31                 | 1931-32                 | 1932-33                 | 1933-34                 |
|                     | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> | <i>1,000<br/>pounds</i> |
| Butter.....         | 1,509                   | 2,330                   | 2,070                   | 2,484                   | 2,611                   | 2,616                   | 1,013                   | 39                      | 16                      | 10                      |
| Coconut oil.....    | 79,449                  | 98,307                  | 107,654                 | 141,000                 | 171,412                 | 185,066                 | 155,954                 | 127,967                 | 134,430                 | 140,083                 |
| Coloring.....       | 38                      | 41                      | 18                      | 19                      | 47                      | 21                      | 11                      | 5                       | 3                       | 3                       |
| Corn oil.....       | 196                     | 174                     | 183                     | 38                      | —                       | (1)                     | 159                     | 74                      | 102                     | 274                     |
| Cottonseed oil..... | 20,966                  | 25,608                  | 23,372                  | 24,801                  | 28,173                  | 30,214                  | 22,037                  | 14,874                  | 16,031                  | 24,338                  |
| Milk.....           | 61,924                  | 72,662                  | 73,700                  | 88,115                  | 94,752                  | 97,753                  | 77,251                  | 54,257                  | 52,007                  | 57,794                  |
| Neutral lard.....   | 25,674                  | 25,172                  | 24,572                  | 25,036                  | 24,189                  | 19,682                  | 10,180                  | 10,557                  | 9,130                   | 9,240                   |
| Oleo oil.....       | 44,102                  | 47,418                  | 48,741                  | 45,477                  | 47,185                  | 45,322                  | 28,040                  | 15,315                  | 12,457                  | 17,984                  |
| Oleo stearine.....  | 5,250                   | 5,314                   | 5,145                   | 5,532                   | 5,834                   | 6,269                   | 5,485                   | 4,337                   | 3,283                   | 3,301                   |
| Oleo stock.....     | 3,183                   | 3,082                   | 2,552                   | 1,738                   | 1,294                   | 1,189                   | 1,025                   | 641                     | 573                     | 832                     |
| Peanut oil.....     | 4,392                   | 5,257                   | 4,872                   | 5,459                   | 6,617                   | 5,714                   | 5,291                   | 3,780                   | 2,338                   | 2,641                   |
| Salt.....           | 18,725                  | 20,593                  | 21,853                  | 25,024                  | 27,311                  | 28,890                  | 22,981                  | 14,659                  | 12,598                  | 14,187                  |
| Soybean oil.....    | —                       | 1                       | 33                      | —                       | —                       | 619                     | 2,262                   | 13                      | 7                       | —                       |
| Miscellaneous.....  | 826                     | 1,501                   | 1,190                   | 1,346                   | 1,512                   | 1,343                   | 3,202                   | 847                     | 861                     | 1,142                   |
| Total.....          | 268,234                 | 307,460                 | 316,085                 | 361,069                 | 410,937                 | 424,648                 | 334,891                 | 247,365                 | 243,836                 | 271,829                 |

<sup>1</sup> Not over 500 pounds.

Bureau of Agricultural Economics; compiled from annual reports of the Bureau of Internal Revenue.

TABLE 420.—*Oleomargarine, standard, uncolored: Average wholesale price<sup>1</sup> per pound, Chicago, by months, 1925-34*

| Year      | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | July         | Aug.         | Sept.        | Oct.         | Nov.         | Dec.         | Average      |
|-----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|           | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> |
| 1925..... | 24.5         | 24.5         | 24.5         | 24.5         | 23.9         | 23.5         | 23.7         | 24.5         | 24.5         | 24.5         | 24.5         | 24.5         | 24.3         |
| 1926..... | 24.5         | 24.3         | 23.5         | 23.3         | 22.5         | 22.5         | 22.5         | 22.5         | 22.5         | 21.8         | 21.5         | 21.5         | 22.8         |
| 1927..... | 21.5         | 21.5         | 21.5         | 21.5         | 21.5         | 21.5         | 21.5         | 21.5         | 23.9         | 24.5         | 23.5         | 23.5         | 22.3         |
| 1928..... | 23.5         | 23.5         | 23.5         | 21.5         | 21.5         | 21.5         | 21.5         | 21.5         | 22.0         | 23.5         | 23.5         | 23.5         | 22.5         |
| 1929..... | 23.5         | 23.5         | 23.5         | 23.5         | 23.5         | 23.5         | 23.5         | 23.5         | 23.5         | 23.5         | 23.5         | 23.5         | 23.5         |
| 1930..... | 23.5         | 23.5         | 23.5         | 23.5         | 23.5         | 22.8         | 20.5         | 20.5         | 20.5         | 20.5         | 20.5         | 19.0         | 21.8         |
| 1931..... | 17.7         | 15.5         | 14.5         | 14.5         | 12.8         | 11.0         | 10.6         | 10.5         | 11.9         | 12.7         | 13.3         | 13.4         | 13.3         |
| 1932..... | 12.8         | 9.8          | 9.5          | 9.5          | 9.5          | 9.5          | 9.1          | 9.3          | 9.5          | 9.5          | 9.5          | 9.5          | 9.7          |
| 1933..... | 9.5          | 8.0          | 7.7          | 8.1          | 9.4          | 9.5          | 9.5          | 9.5          | 9.5          | 9.4          | 7.8          | 7.0          | 8.7          |
| 1934..... | 7.0          | 7.0          | 8.0          | 7.3          | 7.0          | 7.8          | 8.0          | 8.0          | 9.0          | 9.8          | 10.0         | 10.4         | 8.3          |

<sup>1</sup> These prices are for consignment to the wholesale trade.

Bureau of Agricultural Economics; compiled from Bureau of Labor Statistics Wholesale Price Bulletins. Data for earlier years in 1928 Yearbook, table 477.

TABLE 421.—*Chickens: Number on hand Jan. 1 and value, United States, 1925-35*

| Year                    | Number           | Value per head | Total value          | Year      | Number           | Value per head | Total value          |
|-------------------------|------------------|----------------|----------------------|-----------|------------------|----------------|----------------------|
|                         | <i>Thousands</i> | <i>Cents</i>   | <i>1,000 dollars</i> |           | <i>Thousands</i> | <i>Cents</i>   | <i>1,000 dollars</i> |
| 1925 <sup>1</sup> ..... | 402,891          | 82.6           | 373,011              | 1930..... | 489,955          | 92.8           | 436,272              |
| 1925.....               | 417,755          | 79.3           | 331,203              | 1931..... | 460,489          | 70.4           | 324,405              |
| 1926.....               | 424,614          | 88.5           | 375,719              | 1932..... | 451,219          | 61.7           | 278,211              |
| 1927.....               | 450,585          | 90.7           | 408,525              | 1933..... | 461,630          | 45.1           | 208,284              |
| 1928.....               | 467,174          | 85.8           | 401,004              | 1934..... | 455,182          | 42.2           | 191,954              |
| 1929.....               | 445,806          | 91.1           | 406,164              | 1935..... | 411,681          | 54.3           | 223,651              |
| 1930 <sup>1</sup> ..... | 378,878          | 84.9           | 321,625              |           |                  |                |                      |

<sup>1</sup> Census report.

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TABLE 422.—*Chickens: Estimated number on farms and value per head, by States, Jan. 1, 1932-35*

| State and division      | Number of chickens Jan. 1 |               |               |               | Value per head |              |              |              |
|-------------------------|---------------------------|---------------|---------------|---------------|----------------|--------------|--------------|--------------|
|                         | 1932                      | 1933          | 1934          | 1935          | 1932           | 1933         | 1934         | 1935         |
|                         | <i>Thous.</i>             | <i>Thous.</i> | <i>Thous.</i> | <i>Thous.</i> | <i>Cents</i>   | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> |
| Maine.....              | 1,780                     | 1,900         | 1,931         | 1,713         | 110            | 88           | 85           | 90           |
| New Hampshire.....      | 1,090                     | 1,160         | 1,214         | 1,151         | 120            | 95           | 90           | 102          |
| Vermont.....            | 827                       | 868           | 865           | 771           | 105            | 88           | 77           | 88           |
| Massachusetts.....      | 2,190                     | 2,215         | 2,233         | 1,996         | 125            | 105          | 100          | 105          |
| Rhode Island.....       | 350                       | 374           | 374           | 328           | 125            | 105          | 102          | 107          |
| Connecticut.....        | 1,860                     | 2,015         | 2,092         | 1,971         | 105            | 90           | 86           | 98           |
| New York.....           | 14,340                    | 14,765        | 15,252        | 14,367        | 97             | 81           | 74           | 84           |
| New Jersey.....         | 5,525                     | 5,840         | 5,755         | 5,283         | 112            | 94           | 91           | 95           |
| Pennsylvania.....       | 18,900                    | 19,830        | 19,858        | 19,838        | 93             | 68           | 67           | 78           |
| North Atlantic.....     | 46,962                    | 48,967        | 49,574        | 47,418        | 100.2          | 79.7         | 75.9         | 85.1         |
| Ohio.....               | 21,375                    | 22,895        | 22,665        | 20,910        | 67             | 47           | 45           | 60           |
| Indiana.....            | 17,200                    | 17,830        | 17,564        | 16,052        | 64             | 45           | 40           | 55           |
| Illinois.....           | 26,020                    | 26,870        | 26,523        | 24,077        | 63             | 45           | 40           | 54           |
| Michigan.....           | 12,285                    | 12,835        | 12,903        | 11,129        | 71             | 50           | 45           | 62           |
| Wisconsin.....          | 14,800                    | 14,930        | 15,851        | 15,214        | 61             | 47           | 40           | 57           |
| East North Central..... | 91,690                    | 95,360        | 95,506        | 87,352        | 64.9           | 46.5         | 41.9         | 57.2         |
| Minnesota.....          | 19,170                    | 19,160        | 18,727        | 16,660        | 51             | 35           | 30           | 46           |
| Iowa.....               | 34,150                    | 33,875        | 35,335        | 31,915        | 56             | 43           | 37           | 49           |
| Missouri.....           | 27,170                    | 28,320        | 27,146        | 23,271        | 54             | 36           | 31           | 43           |
| North Dakota.....       | 4,530                     | 5,005         | 4,844         | 3,762         | 47             | 32           | 28           | 01           |
| South Dakota.....       | 9,125                     | 9,490         | 8,707         | 6,312         | 51             | 34           | 28           | 44           |
| Nebraska.....           | 15,810                    | 15,980        | 16,806        | 13,108        | 47             | 34           | 30           | 34           |
| Kansas.....             | 21,590                    | 21,785        | 22,102        | 17,706        | 46             | 34           | 29           | 29           |
| West North Central..... | 131,845                   | 133,615       | 133,667       | 112,724       | 51.5           | 36.8         | 31.7         | 44.2         |
| North Central.....      | 223,535                   | 228,975       | 229,173       | 200,106       | 57.0           | 40.8         | 35.9         | 49.9         |
| Delaware.....           | 1,970                     | 2,029         | 2,188         | 2,118         | 82             | 59           | 58           | 71           |
| Maryland.....           | 5,225                     | 5,345         | 5,135         | 5,419         | 78             | 57           | 58           | 71           |
| Virginia.....           | 9,720                     | 10,365        | 9,694         | 9,729         | 68             | 45           | 47           | 58           |
| West Virginia.....      | 3,965                     | 4,220         | 4,067         | 3,932         | 63             | 47           | 47           | 54           |
| North Carolina.....     | 8,960                     | 9,560         | 9,136         | 8,829         | 59             | 39           | 44           | 56           |
| South Carolina.....     | 4,060                     | 4,270         | 4,022         | 4,049         | 57             | 45           | 49           | 55           |
| Georgia.....            | 7,935                     | 7,795         | 7,657         | 7,287         | 52             | 40           | 41           | 50           |
| Florida.....            | 2,785                     | 2,745         | 2,504         | 2,549         | 70             | 58           | 57           | 65           |
| South Atlantic.....     | 44,620                    | 46,329        | 44,403        | 43,912        | 63.8           | 45.9         | 47.9         | 58.3         |
| Kentucky.....           | 10,425                    | 11,085        | 10,948        | 10,703        | 54             | 35           | 33           | 46           |
| Tennessee.....          | 10,880                    | 11,775        | 11,192        | 11,123        | 51             | 33           | 32           | 46           |
| Alabama.....            | 7,645                     | 7,840         | 7,466         | 7,169         | 44             | 35           | 37           | 43           |
| Mississippi.....        | 7,420                     | 7,625         | 6,609         | 6,717         | 47             | 35           | 37           | 43           |
| Arkansas.....           | 8,170                     | 8,820         | 7,938         | 6,903         | 43             | 30           | 28           | 37           |
| Louisiana.....          | 5,075                     | 4,944         | 5,007         | 4,798         | 57             | 38           | 40           | 48           |
| Oklahoma.....           | 13,085                    | 14,100        | 12,689        | 10,623        | 48             | 30           | 27           | 39           |
| Texas.....              | 26,830                    | 27,630        | 25,958        | 22,506        | 47             | 32           | 33           | 40           |
| South Central.....      | 89,430                    | 93,869        | 87,807        | 80,549        | 48.4           | 32.8         | 32.6         | 42.2         |
| Montana.....            | 2,190                     | 2,260         | 2,266         | 1,917         | 53             | 42           | 38           | 44           |
| Idaho.....              | 2,650                     | 2,450         | 2,491         | 2,170         | 52             | 40           | 39           | 46           |
| Wyoming.....            | 870                       | 840           | 851           | 730           | 53             | 44           | 39           | 48           |
| Colorado.....           | 4,110                     | 4,000         | 4,098         | 3,663         | 52             | 34           | 34           | 42           |
| New Mexico.....         | 1,145                     | 1,240         | 1,179         | 1,015         | 59             | 41           | 36           | 41           |
| Arizona.....            | 760                       | 810           | 790           | 688           | 71             | 63           | 67           | 71           |
| Utah.....               | 2,795                     | 2,390         | 2,669         | 2,319         | 53             | 46           | 44           | 47           |
| Nevada.....             | 327                       | 253           | 285           | 287           | 62             | 60           | 59           | 64           |
| Washington.....         | 7,620                     | 7,645         | 7,613         | 7,080         | 65             | 55           | 49           | 63           |
| Oregon.....             | 3,565                     | 3,292         | 3,282         | 3,161         | 72             | 53           | 53           | 63           |
| California.....         | 20,640                    | 18,610        | 18,721        | 16,887        | 80             | 64           | 58           | 70           |
| Western.....            | 46,672                    | 43,790        | 44,225        | 39,596        | 68.7           | 54.3         | 49.9         | 60.5         |
| United States.....      | 451,219                   | 461,630       | 455,182       | 411,581       | 61.7           | 45.1         | 42.2         | 54.3         |

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TABLE 423.—*Chickens: Number raised and value per head, by States, 1931-34*

| State and division      | Number raised |               |               |               | Value per head |              |              |              |
|-------------------------|---------------|---------------|---------------|---------------|----------------|--------------|--------------|--------------|
|                         | 1931          | 1932          | 1933          | 1934          | 1931           | 1932         | 1933         | 1934         |
|                         | <i>Thous.</i> | <i>Thous.</i> | <i>Thous.</i> | <i>Thous.</i> | <i>Cents</i>   | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> |
| Maine.....              | 3,380         | 3,650         | 3,796         | 3,227         | 89             | 69           | 59           | 63           |
| New Hampshire.....      | 2,640         | 2,640         | 3,010         | 2,709         | 87             | 68           | 55           | 62           |
| Vermont.....            | 1,380         | 1,520         | 1,672         | 1,338         | 84             | 64           | 57           | 58           |
| Massachusetts.....      | 5,120         | 5,530         | 5,862         | 4,883         | 87             | 66           | 57           | 64           |
| Rhode Island.....       | 640           | 685           | 712           | 606           | 95             | 78           | 66           | 70           |
| Connecticut.....        | 3,795         | 3,795         | 4,175         | 3,849         | 90             | 74           | 58           | 64           |
| New York.....           | 18,555        | 21,336        | 22,616        | 19,224        | 72             | 59           | 50           | 54           |
| New Jersey.....         | 7,480         | 7,855         | 7,855         | 7,305         | 96             | 76           | 68           | 74           |
| Pennsylvania.....       | 23,640        | 24,800        | 24,800        | 24,056        | 78             | 62           | 50           | 58           |
| North Atlantic.....     | 66,630        | 71,811        | 74,498        | 66,997        | 80.9           | 64.4         | 53.9         | 59.9         |
| Ohio.....               | 29,710        | 32,085        | 33,370        | 28,698        | 62             | 44           | 37           | 48           |
| Indiana.....            | 27,280        | 29,190        | 29,482        | 25,356        | 60             | 45           | 36           | 47           |
| Illinois.....           | 35,140        | 37,250        | 37,622        | 34,612        | 64             | 46           | 37           | 48           |
| Michigan.....           | 18,510        | 18,880        | 20,579        | 16,257        | 60             | 45           | 37           | 46           |
| Wisconsin.....          | 20,016        | 19,610        | 22,747        | 20,246        | 56             | 38           | 34           | 39           |
| East North Central..... | 130,656       | 137,015       | 143,800       | 125,169       | 60.9           | 44.0         | 36.3         | 46.1         |
| Minnesota.....          | 27,790        | 27,235        | 28,324        | 23,509        | 52             | 35           | 28           | 38           |
| Iowa.....               | 45,830        | 44,455        | 50,234        | 44,206        | 62             | 43           | 34           | 45           |
| Missouri.....           | 34,890        | 39,430        | 38,641        | 34,390        | 52             | 36           | 27           | 34           |
| North Dakota.....       | 6,990         | 6,920         | 7,335         | 5,721         | 45             | 32           | 26           | 31           |
| South Dakota.....       | 13,085        | 13,085        | 13,870        | 8,322         | 52             | 36           | 28           | 36           |
| Nebraska.....           | 22,950        | 23,640        | 26,004        | 22,104        | 51             | 37           | 27           | 34           |
| Kansas.....             | 31,645        | 33,225        | 35,883        | 29,783        | 48             | 34           | 24           | 30           |
| West North Central..... | 183,180       | 187,990       | 200,291       | 168,035       | 53.4           | 37.1         | 28.4         | 36.7         |
| North Central.....      | 313,836       | 325,005       | 344,091       | 293,204       | 56.5           | 40.0         | 31.7         | 40.7         |
| Delaware.....           | 2,950         | 3,245         | 3,570         | 3,213         | 67             | 49           | 43           | 53           |
| Maryland.....           | 7,050         | 7,755         | 7,042         | 6,760         | 72             | 51           | 45           | 53           |
| Virginia.....           | 16,550        | 19,030        | 16,746        | 17,583        | 56             | 37           | 35           | 42           |
| West Virginia.....      | 4,905         | 6,130         | 5,333         | 5,440         | 61             | 40           | 37           | 45           |
| North Carolina.....     | 13,650        | 15,015        | 14,114        | 13,408        | 47             | 35           | 32           | 38           |
| South Carolina.....     | 7,860         | 7,730         | 6,725         | 6,827         | 51             | 37           | 34           | 39           |
| Georgia.....            | 11,635        | 11,635        | 11,635        | 10,588        | 46             | 33           | 31           | 38           |
| Florida.....            | 3,410         | 3,070         | 2,763         | 2,708         | 58             | 50           | 42           | 47           |
| South Atlantic.....     | 67,510        | 73,610        | 67,928        | 66,627        | 54.5           | 38.8         | 35.5         | 42.3         |
| Kentucky.....           | 14,530        | 16,355        | 16,181        | 16,181        | 49             | 34           | 28           | 35           |
| Tennessee.....          | 14,224        | 15,930        | 15,133        | 14,679        | 47             | 33           | 27           | 34           |
| Alabama.....            | 10,500        | 11,340        | 10,773        | 9,696         | 37             | 27           | 26           | 30           |
| Mississippi.....        | 10,180        | 10,405        | 8,948         | 9,664         | 37             | 30           | 25           | 30           |
| Arkansas.....           | 10,845        | 11,725        | 10,318        | 8,977         | 43             | 29           | 23           | 29           |
| Louisiana.....          | 5,825         | 5,941         | 6,238         | 5,988         | 48             | 34           | 31           | 36           |
| Oklahoma.....           | 20,497        | 22,135        | 19,921        | 17,331        | 45             | 30           | 23           | 29           |
| Texas.....              | 34,460        | 35,840        | 32,256        | 29,030        | 41             | 29           | 25           | 29           |
| South Central.....      | 121,061       | 130,171       | 119,768       | 111,546       | 43.2           | 30.4         | 25.6         | 31.1         |
| Montana.....            | 3,610         | 3,680         | 3,496         | 2,972         | 48             | 40           | 32           | 34           |
| Idaho.....              | 3,427         | 3,015         | 3,317         | 3,029         | 48             | 34           | 27           | 32           |
| Wyoming.....            | 1,400         | 1,190         | 1,357         | 1,153         | 47             | 38           | 33           | 37           |
| Colorado.....           | 5,245         | 5,040         | 5,393         | 5,339         | 47             | 35           | 28           | 33           |
| New Mexico.....         | 1,450         | 1,670         | 1,588         | 1,348         | 50             | 40           | 32           | 32           |
| Arizona.....            | 947           | 995           | 1,015         | 863           | 72             | 59           | 50           | 57           |
| Utah.....               | 3,398         | 2,752         | 3,633         | 2,906         | 42             | 36           | 29           | 31           |
| Nevada.....             | 448           | 336           | 420           | 336           | 65             | 47           | 45           | 46           |
| Washington.....         | 10,063        | 11,090        | 10,868        | 10,107        | 50             | 35           | 31           | 35           |
| Oregon.....             | 5,330         | 4,477         | 4,790         | 4,646         | 52             | 40           | 33           | 36           |
| California.....         | 24,900        | 21,165        | 22,223        | 21,112        | 55             | 47           | 42           | 41           |
| Western.....            | 60,238        | 55,410        | 58,098        | 53,811        | 51.7           | 41.0         | 35.3         | 37.2         |
| United States.....      | 629,275       | 656,007       | 664,383       | 592,185       | 55.9           | 40.7         | 33.8         | 40.9         |

TABLE 424.—*Chickens: Number raised and value, United States, 1924-34*

| Year                    | Number    | Value per head | Total value | Year      | Number    | Value per head | Total value |
|-------------------------|-----------|----------------|-------------|-----------|-----------|----------------|-------------|
|                         | Thousands | Cents          | 1,000 dol.  |           | Thousands | Cents          | 1,000 dol.  |
| 1924 <sup>1</sup> ..... | 545,848   | 76.8           | 419,881     | 1929..... | 673,070   | 77.9           | 524,383     |
| 1925.....               | 608,268   | 72.0           | 437,685     | 1930..... | 653,101   | 63.2           | 412,904     |
| 1926.....               | 643,649   | 76.3           | 491,370     | 1931..... | 629,275   | 55.9           | 351,584     |
| 1927.....               | 672,123   | 71.9           | 483,430     | 1932..... | 656,007   | 40.7           | 267,252     |
| 1928.....               | 627,357   | 76.7           | 481,362     | 1933..... | 664,383   | 33.8           | 224,459     |
| 1929 <sup>1</sup> ..... | 673,092   | 86.8           | 581,110     | 1934..... | 592,185   | 40.9           | 242,422     |

<sup>1</sup> Census report.

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TABLE 425.—*Poultry, live: Freight receipts at New York, by State of origin, 1930-34*

| State              | 1930  | 1931  | 1932  | 1933  | 1934  | State               | 1930   | 1931   | 1932  | 1933  | 1934  |
|--------------------|-------|-------|-------|-------|-------|---------------------|--------|--------|-------|-------|-------|
|                    | Cars  | Cars  | Cars  | Cars  | Cars  |                     | Cars   | Cars   | Cars  | Cars  | Cars  |
| Alabama.....       | 129   | 166   | 151   | 99    | 36    | New Jersey.....     | 1      |        |       |       |       |
| Arkansas.....      | 349   | 359   | 290   | 248   | 304   | New Mexico.....     | 2      |        |       |       |       |
| Colorado.....      | 82    | 24    | 17    | 2     | 1     | New York.....       |        |        |       |       |       |
| Delaware.....      | 4     |       |       |       |       | North Carolina..... | 107    | 68     | 50    | 35    | 9     |
| Florida.....       | 79    | 82    | 35    | 9     |       | North Dakota.....   | 55     | 76     | 48    | 22    | 6     |
| Georgia.....       | 1,174 | 978   | 851   | 1,234 | 1,128 | Ohio.....           | 306    | 335    | 461   | 492   | 336   |
| Illinois.....      | 1,168 | 942   | 1,051 | 1,092 | 981   | Oklahoma.....       | 763    | 728    | 445   | 248   | 343   |
| Indiana.....       | 604   | 732   | 598   | 432   | 419   | Pennsylvania.....   | 12     | 8      | 4     |       |       |
| Iowa.....          | 809   | 447   | 480   | 254   | 236   | South Carolina..... | 49     | 59     | 44    | 24    | 7     |
| Kansas.....        | 511   | 593   | 596   | 732   | 580   | South Dakota.....   | 214    | 300    | 271   | 157   | 147   |
| Kentucky.....      |       |       | 12    | 3     |       | Tennessee.....      | 642    | 857    | 690   | 805   | 618   |
| Louisiana.....     |       |       |       |       |       | Texas.....          | 332    | 233    | 183   | 125   | 74    |
| Maryland.....      | 2     | 1     |       |       | 3     | Utah.....           |        |        |       |       |       |
| Massachusetts..... |       |       |       |       |       | Virginia.....       | 91     | 96     | 66    | 34    | 23    |
| Michigan.....      |       |       | 2     | 3     |       | Wisconsin.....      | 188    | 192    | 68    | 10    | 2     |
| Minnesota.....     | 123   | 187   | 58    | 29    | 28    | Wyoming.....        | 4      | 1      |       |       | 1     |
| Mississippi.....   | 76    | 75    | 60    | 46    | 33    | Other States.....   |        |        |       | 1     |       |
| Missouri.....      | 2,019 | 1,650 | 1,839 | 1,611 | 1,667 |                     |        |        |       |       |       |
| Nebraska.....      | 1,082 | 985   | 802   | 432   | 659   | United States.....  | 10,677 | 10,152 | 9,126 | 8,150 | 7,641 |

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TABLE 426.—*Poultry, dressed: Receipts, gross weight,<sup>1</sup> at 4 markets, by months, 1930-34, and total, 1925-34*

| Market and year | Jan.      | Feb.      | Mar.      | Apr.      | May       | June      | July      | Aug.      | Sept.     | Oct.      | Nov.      | Dec.      | Total     |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                 | 1,000 lb. | 1,000 lb. | 1,000 lb. | 1,000 lb. | 1,000 lb. | 1,000 lb. | 1,000 lb. | 1,000 lb. | 1,000 lb. | 1,000 lb. | 1,000 lb. | 1,000 lb. | 1,000 lb. |
| Boston:         |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 1930.....       | 4,270     | 3,992     | 2,815     | 2,544     | 3,193     | 3,514     | 3,401     | 2,952     | 3,154     | 3,875     | 8,270     | 9,309     | 51,289    |
| 1931.....       | 4,840     | 4,565     | 3,846     | 2,976     | 2,559     | 3,216     | 3,476     | 3,635     | 3,787     | 4,434     | 9,698     | 10,750    | 57,782    |
| 1932.....       | 4,141     | 3,927     | 4,094     | 2,730     | 2,967     | 3,255     | 2,839     | 3,487     | 3,619     | 4,265     | 10,633    | 12,256    | 58,213    |
| 1933.....       | 5,543     | 3,803     | 3,387     | 3,369     | 3,532     | 4,128     | 3,800     | 4,004     | 3,939     | 5,081     | 12,374    | 11,408    | 64,728    |
| 1934.....       | 4,545     | 3,054     | 2,617     | 2,393     | 3,360     | 3,385     | 3,202     | 3,330     | 3,243     | 4,249     | 9,812     | 9,482     | 52,782    |
| New York:       |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 1930.....       | 15,054    | 11,674    | 8,476     | 10,630    | 13,877    | 14,999    | 11,807    | 12,533    | 15,383    | 19,647    | 32,584    | 34,221    | 200,885   |
| 1931.....       | 17,969    | 13,396    | 9,920     | 10,073    | 10,553    | 13,657    | 15,248    | 18,294    | 21,147    | 18,749    | 33,029    | 36,882    | 218,911   |
| 1932.....       | 12,534    | 9,910     | 10,292    | 8,852     | 11,454    | 13,728    | 12,708    | 14,288    | 15,362    | 19,651    | 34,609    | 32,057    | 195,445   |
| 1933.....       | 15,747    | 11,835    | 10,963    | 12,116    | 15,013    | 15,641    | 14,144    | 16,329    | 17,417    | 21,220    | 39,622    | 33,084    | 223,094   |
| 1934.....       | 18,168    | 10,957    | 9,705     | 8,209     | 12,633    | 15,976    | 15,069    | 14,477    | 16,118    | 19,717    | 32,954    | 30,048    | 204,067   |
| Philadelphia:   |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 1930.....       | 3,041     | 2,501     | 2,207     | 1,991     | 2,388     | 2,117     | 1,794     | 1,772     | 2,186     | 3,046     | 5,607     | 7,906     | 36,536    |
| 1931.....       | 2,384     | 2,179     | 2,863     | 1,754     | 1,560     | 2,509     | 2,729     | 2,878     | 2,555     | 2,524     | 6,018     | 8,243     | 38,193    |
| 1932.....       | 1,681     | 2,467     | 1,943     | 1,960     | 2,555     | 1,934     | 1,912     | 2,101     | 2,096     | 2,614     | 6,259     | 6,635     | 36,447    |
| 1933.....       | 3,141     | 2,117     | 1,894     | 2,027     | 2,569     | 2,344     | 2,115     | 1,900     | 1,743     | 2,306     | 6,591     | 7,719     | 37,066    |
| 1934.....       | 2,725     | 2,731     | 1,745     | 1,377     | 2,331     | 1,859     | 2,371     | 2,136     | 1,998     | 2,405     | 5,599     | 6,245     | 32,972    |
| Chicago:        |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 1930.....       | 9,835     | 5,597     | 2,899     | 2,339     | 2,163     | 2,645     | 2,303     | 2,777     | 3,800     | 6,274     | 19,409    | 20,103    | 80,153    |
| 1931.....       | 7,770     | 4,529     | 3,563     | 2,320     | 2,309     | 2,501     | 3,130     | 2,673     | 4,642     | 4,397     | 14,203    | 18,438    | 71,476    |
| 1932.....       | 4,855     | 3,317     | 2,398     | 1,505     | 1,428     | 1,326     | 853       | 1,616     | 3,333     | 5,282     | 19,736    | 19,752    | 65,340    |
| 1933.....       | 4,713     | 2,442     | 1,241     | 859       | 1,294     | 1,558     | 1,668     | 1,355     | 1,474     | 2,982     | 19,731    | 18,116    | 55,430    |
| 1934.....       | 3,900     | 1,785     | 1,452     | 787       | 863       | 1,235     | 1,436     | 1,621     | 2,882     | 4,296     | 13,827    | 10,620    | 44,704    |
| Total.....      |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 1925.....       | 27,585    | 19,383    | 15,048    | 13,323    | 16,166    | 17,487    | 17,676    | 17,466    | 18,683    | 27,250    | 61,488    | 66,794    | 318,368   |
| 1926.....       | 26,122    | 18,576    | 17,344    | 13,809    | 16,371    | 21,090    | 20,724    | 22,932    | 24,278    | 30,738    | 88,594    | 75,438    | 355,815   |
| 1927.....       | 26,652    | 18,119    | 15,362    | 13,772    | 19,853    | 21,015    | 17,739    | 22,376    | 22,935    | 28,710    | 90,422    | 68,974    | 336,979   |
| 1928.....       | 28,602    | 20,012    | 17,560    | 15,815    | 17,608    | 18,571    | 21,833    | 21,910    | 23,584    | 35,163    | 103,559   | 78,963    | 374,348   |
| 1929.....       | 29,067    | 19,451    | 16,666    | 16,571    | 17,319    | 20,178    | 21,885    | 25,638    | 27,579    | 37,262    | 71,901    | 75,757    | 379,522   |
| 1930.....       | 32,200    | 23,784    | 16,397    | 17,504    | 21,621    | 23,275    | 19,305    | 20,634    | 24,512    | 32,842    | 85,870    | 71,039    | 368,863   |
| 1931.....       | 32,963    | 24,669    | 20,192    | 17,123    | 16,981    | 21,883    | 24,577    | 28,472    | 32,131    | 30,104    | 94,842    | 74,313    | 386,361   |
| 1932.....       | 23,411    | 19,621    | 18,725    | 15,047    | 18,404    | 20,243    | 18,312    | 21,487    | 24,410    | 31,764    | 72,772    | 70,305    | 355,454   |
| 1933.....       | 29,144    | 20,797    | 17,485    | 18,370    | 22,708    | 23,671    | 21,727    | 25,588    | 24,673    | 31,589    | 78,318    | 68,348    | 380,318   |
| 1934.....       | 29,338    | 17,927    | 15,519    | 12,768    | 19,237    | 22,455    | 22,078    | 21,564    | 24,241    | 30,667    | 62,192    | 56,431    | 334,415   |

<sup>1</sup> Gross weight includes container and wrapping.

Bureau of Agricultural Economics; compiled from reports of Bureau representatives in the various

TABLE 427.—*Poultry, dressed: Receipts, gross weight,<sup>1</sup> at 4 markets, by State of origin, 1930-34*

| Market and origin | 1930      | 1931      | 1932      | 1933      | 1934      | Market and origin | 1930      | 1931      | 1932      | 1933      | 1934      |
|-------------------|-----------|-----------|-----------|-----------|-----------|-------------------|-----------|-----------|-----------|-----------|-----------|
| BOSTON            | 1,000 lb. | 1,000 lb. | 1,000 lb. | 1,000 lb. | 1,000 lb. | CHICAGO           | 1,000 lb. | 1,000 lb. | 1,000 lb. | 1,000 lb. | 1,000 lb. |
| Ill.              | 10,497    | 9,284     | 8,909     | 8,698     | 8,625     | Ark.              | 216       | 381       | 38        | 18        | 106       |
| Ind.              | 3,677     | 3,296     | 3,270     | 4,301     | 2,945     | Calif.            | 78        | 138       | 18        | 2         | 3         |
| Iowa.             | 7,495     | 8,917     | 9,109     | 10,144    | 8,785     | Colo.             | 546       | 433       | 631       | 333       | 384       |
| Kans.             | 2,155     | 3,774     | 3,495     | 4,346     | 3,485     | Idaho.            | 446       | 84        | 34        | 10        | 1         |
| Ky.               | 365       | 227       | 312       | 614       | 196       | Ill.              | 3,521     | 3,376     | 2,734     | 3,671     | 3,388     |
| Maine.            | 479       | 319       | 313       | 207       | 101       | Ind.              | 801       | 217       | 235       | 291       | 280       |
| Mass.             | 37        | 5         | 5         | 2         | 29        | Iowa.             | 18,152    | 13,694    | 11,689    | 9,702     | 8,985     |
| Mich.             | 515       | 424       | 466       | 503       | 410       | Kans.             | 4,111     | 4,580     | 2,847     | 1,377     | 1,783     |
| Minn.             | 9,024     | 9,502     | 5,835     | 10,351    | 9,331     | Ky.               | 143       | 477       | 153       | 195       | 182       |
| Mo.               | 2,328     | 2,100     | 3,126     | 2,646     | 2,094     | Mich.             | 111       | 79        | 84        | 66        | 110       |
| Nebr.             | 3,950     | 3,763     | 3,233     | 2,789     | 2,751     | Minn.             | 9,891     | 10,852    | 9,512     | 7,017     | 5,134     |
| N. H.             | 25        | 13        | 18        | 12        | 6         | Mo.               | 5,985     | 4,603     | 4,293     | 2,732     | 3,355     |
| N. Y.             | 1,008     | 942       | 429       | 621       | 349       | Mont.             | 1,898     | 1,155     | 1,339     | 1,377     | 891       |
| N. Dak.           | 1,521     | 2,678     | 5,575     | 4,526     | 3,446     | Nebr.             | 3,875     | 4,273     | 2,789     | 1,970     | 2,201     |
| Ohio.             | 84        | 254       | 258       | 228       | 272       | N. J.             | ---       | 194       | 74        | ---       | 27        |
| Okla.             | 1,215     | 1,889     | 1,474     | 2,013     | 1,636     | N. Mex.           | 228       | 164       | 250       | 47        | 29        |
| Pa.               | 21        | 200       | 126       | 152       | 36        | N. Y.             | 455       | 266       | 70        | 77        | 69        |
| S. Dak.           | 377       | 1,541     | 2,723     | 4,065     | 2,572     | N. Dak.           | 7,616     | 6,826     | 10,850    | 12,064    | 7,164     |
| Tenn.             | 173       | 323       | 590       | 774       | 353       | Ohio.             | 1,855     | 59        | 31        | 31        | 69        |
| Tex.              | 5,476     | 7,099     | 6,937     | 6,119     | 3,629     | Okla.             | 1,880     | 2,607     | 1,616     | 1,675     | 845       |
| Vt.               | 31        | 31        | 25        | 54        | 60        | S. Dak.           | 9,010     | 9,282     | 8,132     | 6,024     | 4,046     |
| Wis.              | 94        | 322       | 31        | 71        | 96        | Tenn.             | 381       | 393       | 155       | 66        | 544       |
| Other States.     | 742       | 1,250     | 1,756     | 1,492     | 962       | Tex.              | 6,268     | 4,459     | 4,967     | 4,478     | 3,267     |
| Canada.           | ---       | 149       | ---       | ---       | ---       | Wis.              | 3,135     | 2,310     | 1,789     | 1,486     | 1,560     |
| Total.            | 51,289    | 57,782    | 58,213    | 64,728    | 52,672    | Wyo.              | 444       | 264       | 313       | 235       | 166       |
|                   |           |           |           |           |           | Other States.     | 779       | 329       | 526       | 50        | 120       |
| NEW YORK          |           |           |           |           |           | Total.            | 80,153    | 71,475    | 65,349    | 55,430    | 44,704    |
| Ark.              | 532       | 337       | 703       | 898       | 698       | PHILADELPHIA      |           |           |           |           |           |
| Calif.            | 1,476     | 1,668     | 1,707     | 416       | 2,235     | Colo.             | 16        | 283       | 495       | 465       | 184       |
| Del.              | 1,225     | 891       | 1,741     | 1,005     | 1,628     | Idaho.            | 592       | 200       | 237       | 319       | 283       |
| Idaho.            | 1,122     | 1,612     | 1,442     | 738       | 934       | Ill.              | 2,897     | 3,627     | 3,071     | 3,850     | 3,059     |
| Ill.              | 28,182    | 27,594    | 20,970    | 22,450    | 14,194    | Ind.              | 1,562     | 1,401     | 879       | 622       | 843       |
| Ind.              | 13,637    | 9,671     | 8,368     | 7,305     | 6,480     | Iowa.             | 6,577     | 6,333     | 6,544     | 6,641     | 5,820     |
| Iowa.             | 30,295    | 36,614    | 26,995    | 38,090    | 40,370    | Kans.             | 2,248     | 2,496     | 2,242     | 2,207     | 2,255     |
| Kans.             | 18,887    | 16,926    | 19,746    | 21,936    | 21,424    | Ky.               | 756       | 218       | 791       | 794       | 701       |
| Ky.               | 2,329     | 2,672     | 2,287     | 2,494     | 2,073     | Md.               | 82        | 84        | 40        | 42        | 14        |
| Md.               | 283       | 241       | 179       | 199       | 104       | Mich.             | 117       | 266       | 47        | 28        | 28        |
| Mass.             | 390       | 113       | 114       | 136       | 97        | Minn.             | 7,595     | 8,707     | 6,995     | 5,137     | 5,094     |
| Mich.             | 1,435     | 2,374     | 1,649     | 370       | 509       | Mo.               | 1,222     | 1,570     | 2,401     | 2,207     | 2,551     |
| Minn.             | 21,322    | 24,080    | 24,450    | 26,806    | 27,632    | Nebr.             | 1,288     | 2,416     | 2,321     | 2,369     | 2,449     |
| Mo.               | 16,301    | 13,974    | 10,399    | 16,385    | 13,101    | N. J.             | 812       | 197       | ---       | 10        | ---       |
| Mont.             | 899       | 450       | 545       | 739       | 653       | N. Y.             | 442       | 310       | 46        | 171       | 332       |
| Nebr.             | 8,861     | 9,512     | 10,031    | 14,189    | 13,533    | N. Dak.           | 882       | 793       | 1,273     | 1,260     | 953       |
| N. J.             | 178       | 297       | 256       | 217       | 82        | Ohio.             | 390       | 92        | 83        | 323       | 209       |
| N. Y.             | 14,415    | 23,858    | 19,582    | 20,110    | 17,910    | Okla.             | 2,418     | 2,508     | 2,092     | 1,549     | 1,164     |
| N. Dak.           | 2,099     | 2,788     | 4,194     | 5,786     | 4,871     | Pa.               | 69        | 14        | 63        | 6         | 5         |
| Ohio.             | 2,519     | 3,154     | 2,184     | 3,406     | 2,958     | S. Dak.           | 922       | 574       | 679       | 788       | 459       |
| Okla.             | 6,410     | 8,503     | 8,972     | 9,765     | 9,517     | Tex.              | 3,029     | 4,815     | 4,955     | 5,479     | 4,426     |
| Oreg.             | 358       | 747       | 1,005     | 241       | 812       | Va.               | 853       | 421       | 462       | 380       | 362       |
| Pa.               | 537       | 801       | 946       | 855       | 302       | W. Va.            | 302       | 143       | 116       | 146       | 118       |
| S. Dak.           | 5,007     | 6,425     | 5,667     | 8,057     | 5,142     | Wis.              | 191       | 125       | 64        | 234       | 131       |
| Tenn.             | 2,390     | 3,890     | 3,625     | 2,718     | 2,334     | Other States.     | 1,274     | 600       | 551       | 2,037     | 1,532     |
| Tex.              | 15,301    | 15,612    | 14,059    | 14,018    | 10,108    | Total.            | 36,536    | 38,193    | 36,447    | 37,066    | 32,972    |
| Utah.             | 559       | 472       | 575       | 533       | 861       |                   |           |           |           |           |           |
| Va.               | 1,586     | 722       | 660       | 730       | 418       |                   |           |           |           |           |           |
| Wash.             | 353       | 353       | 493       | 338       | 732       |                   |           |           |           |           |           |
| Wis.              | 1,304     | 1,103     | 833       | 901       | 1,156     |                   |           |           |           |           |           |
| Wyo.              | 449       | 510       | 489       | 679       | 646       |                   |           |           |           |           |           |
| Other States.     | 705       | 600       | 583       | 534       | 453       |                   |           |           |           |           |           |
| Canada.           | ---       | 42        | 46        | ---       | ---       |                   |           |           |           |           |           |
| Total.            | 200,885   | 218,911   | 195,445   | 223,094   | 204,067   |                   |           |           |           |           |           |

<sup>1</sup> Gross weight includes container and wrapping.

Bureau of Agricultural Economics; compiled from reports of Bureau representatives in the various markets.

TABLE 428.—*Poultry: Receipts at New York, Chicago, Philadelphia, and Boston, 1920-34*DRESSED POULTRY <sup>1</sup>

| Year      | New York         | Chicago          | Philadel-<br>phia | Boston           | Year      | New York         | Chicago          | Philadel-<br>phia | Boston           |
|-----------|------------------|------------------|-------------------|------------------|-----------|------------------|------------------|-------------------|------------------|
|           | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i>  | <i>1,000 lb.</i> |           | <i>1,000 lb.</i> | <i>1,000 lb.</i> | <i>1,000 lb.</i>  | <i>1,000 lb.</i> |
| 1920----- | 101,093          | 57,324           | 21,606            | 34,086           | 1928----- | 194,376          | 67,180           | 31,844            | 55,583           |
| 1921----- | 124,551          | 64,992           | 22,892            | 39,921           | 1929----- | 197,057          | 93,368           | 34,664            | 54,433           |
| 1922----- | 138,212          | 73,661           | 21,319            | 44,563           | 1930----- | 200,885          | 80,153           | 36,536            | 51,289           |
| 1923----- | 163,948          | 90,273           | 24,611            | 56,013           | 1931----- | 218,911          | 71,475           | 38,193            | 57,782           |
| 1924----- | 179,362          | 88,464           | 27,640            | 61,264           | 1932----- | 195,445          | 65,349           | 36,447            | 58,213           |
| 1925----- | 170,257          | 72,086           | 29,295            | 46,720           | 1933----- | 223,094          | 55,430           | 37,066            | 64,728           |
| 1926----- | 192,895          | 77,632           | 32,126            | 53,162           | 1934----- | 204,067          | 44,704           | 32,972            | 52,672           |
| 1927----- | 188,117          | 63,735           | 31,822            | 53,305           |           |                  |                  |                   |                  |

## LIVE POULTRY

| Year      | New York <sup>1</sup> |                          |                          | Year      | New York <sup>2</sup> |                          |                          | Chicago     |                          |                          |
|-----------|-----------------------|--------------------------|--------------------------|-----------|-----------------------|--------------------------|--------------------------|-------------|--------------------------|--------------------------|
|           | Freight               | Express                  | Truck                    |           | Freight               | Express                  | Truck                    | Freight     | Express                  | Truck                    |
|           | <i>Cars</i>           | <i>Cars <sup>3</sup></i> | <i>Cars <sup>3</sup></i> |           | <i>Cars</i>           | <i>Cars <sup>3</sup></i> | <i>Cars <sup>3</sup></i> | <i>Cars</i> | <i>Cars <sup>3</sup></i> | <i>Cars <sup>3</sup></i> |
| 1920----- | 8,454                 | -----                    | -----                    | 1927----- | 12,104                | 830                      | -----                    | -----       | -----                    | -----                    |
| 1921----- | 10,730                | -----                    | -----                    | 1928----- | 11,267                | 833                      | -----                    | -----       | -----                    | -----                    |
| 1922----- | <sup>4</sup> 11,672   | -----                    | -----                    | 1929----- | 10,493                | 599                      | -----                    | 1,814       | 2,293                    | 2,108                    |
| 1923----- | 12,072                | 443                      | -----                    | 1930----- | 10,677                | 423                      | 1,386                    | 1,141       | 2,113                    | 2,122                    |
| 1924----- | 11,677                | 586                      | -----                    | 1931----- | 10,152                | 253                      | 1,498                    | 837         | 1,277                    | 2,902                    |
| 1925----- | 10,498                | 747                      | -----                    | 1932----- | 9,126                 | 142                      | 2,048                    | 818         | 570                      | 3,461                    |
| 1926----- | 11,497                | 668                      | -----                    | 1933----- | 8,150                 | 101                      | 2,317                    | 155         | 358                      | 3,772                    |
|           |                       |                          |                          | 1934----- | 7,641                 | 99                       | 2,428                    | 305         | 360                      | 3,658                    |

<sup>1</sup> Gross weights, which include container and wrapping.<sup>2</sup> From 1919-26, inclusive, compiled from reports of Urner-Barry Co.<sup>3</sup> Car-lot equivalents calculated from express and truck receipts.<sup>4</sup> Includes express.

Bureau of Agricultural Economics. Compiled from reports of Bureau representatives in the markets.

TABLE 429.—*Poultry, fresh dressed: Average wholesale price per pound, New York City, by months, 1933 and 1934*

| Month                               | 1933         |               |              |               |              |   | 1934         |               |              |               |              |   |
|-------------------------------------|--------------|---------------|--------------|---------------|--------------|---|--------------|---------------|--------------|---------------|--------------|---|
|                                     | Fowl         | Broil-<br>ers | Fry-<br>ers  | Roast-<br>ers | Cocks        | Weight-<br>ed aver-<br>age <sup>1</sup> | Fowl         | Broil-<br>ers | Fry-<br>ers  | Roast-<br>ers | Cocks        | Weight-<br>ed aver-<br>age <sup>1</sup> |
|                                     | <i>Cents</i> | <i>Cents</i>  | <i>Cents</i> | <i>Cents</i>  | <i>Cents</i> | <i>Cents</i>                            | <i>Cents</i> | <i>Cents</i>  | <i>Cents</i> | <i>Cents</i>  | <i>Cents</i> | <i>Cents</i>                            |
| January-----                        | 16.00        | 17.00         | 14.90        | 15.90         | 10.00        | 15.85                                   | 14.98        | 17.40         | 14.90        | 17.90         | 9.30         | 15.83                                   |
| February-----                       | 15.40        | 19.20         | 16.00        | 16.50         | 11.00        | 15.61                                   | 15.18        | -----         | 15.00        | 18.00         | 10.00        | 15.30                                   |
| March-----                          | 15.10        | -----         | -----        | 12.18         | 11.00        | 14.84                                   | 16.58        | -----         | -----        | 18.00         | 10.00        | 15.62                                   |
| April-----                          | 16.20        | -----         | -----        | -----         | 11.00        | 16.01                                   | 18.00        | -----         | -----        | -----         | 10.33        | 14.71                                   |
| May-----                            | 16.12        | 23.25         | -----        | -----         | 11.00        | 16.09                                   | 17.60        | 24.50         | -----        | -----         | 10.37        | 16.16                                   |
| June-----                           | 14.56        | 20.00         | 21.10        | -----         | 10.70        | 15.68                                   | 16.13        | 25.62         | 27.73        | -----         | 9.50         | 17.74                                   |
| July-----                           | 14.60        | 18.90         | 19.80        | 22.00         | 10.00        | 15.76                                   | 15.48        | 21.04         | 24.68        | 26.43         | 10.12        | 17.66                                   |
| August-----                         | 14.00        | 18.00         | 17.60        | 24.00         | 10.00        | 16.23                                   | 16.71        | 21.13         | 23.81        | 26.00         | 10.69        | 19.45                                   |
| September-----                      | 14.86        | 18.35         | 16.10        | 22.50         | 10.00        | 17.22                                   | 18.20        | 22.80         | 20.30        | 25.90         | 12.60        | 20.87                                   |
| October-----                        | 13.98        | 18.30         | 14.60        | 17.40         | 10.00        | 15.37                                   | 17.04        | 22.10         | 19.00        | 21.25         | 13.00        | 18.97                                   |
| November-----                       | 13.40        | 16.70         | 14.40        | 16.80         | 9.50         | 14.73                                   | 17.18        | 21.00         | 18.26        | 21.80         | 13.00        | 19.06                                   |
| December-----                       | 13.80        | 16.70         | 14.20        | 17.00         | 9.00         | 14.93                                   | 17.01        | 20.55         | 18.00        | 22.36         | 12.80        | 18.99                                   |
| Weighted average <sup>1</sup> ----- | 14.72        | 18.87         | 16.01        | 17.48         | 10.16        | 15.61                                   | 16.66        | 22.35         | 20.49        | 21.74         | 11.12        | 18.36                                   |

<sup>1</sup> Weighted on basis of market receipts by classes.

Bureau of Agricultural Economics. Compiled from American Creamery and Poultry Produce Review.

TABLE 430.—*Poultry, frozen: Cold-storage holdings,<sup>1</sup> by months, United States, 1925-34*

| Year      | Jan. 1       | Feb. 1       | Mar. 1       | Apr. 1       | May 1        | June 1       | July 1       | Aug. 1       | Sept. 1      | Oct. 1       | Nov. 1       | Dec. 1       |
|-----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|           | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. | 1,000<br>lb. |
| 1925..... | 133,990      | 138,189      | 130,513      | 108,608      | 83,732       | 68,126       | 58,562       | 53,588       | 47,946       | 44,345       | 53,787       | 86,733       |
| 1926..... | 111,501      | 108,512      | 95,397       | 73,124       | 52,783       | 42,808       | 36,730       | 35,793       | 38,634       | 44,771       | 64,942       | 106,854      |
| 1927..... | 144,497      | 145,076      | 129,510      | 104,697      | 77,282       | 61,525       | 50,064       | 42,293       | 39,711       | 43,201       | 52,315       | 85,030       |
| 1928..... | 117,490      | 118,154      | 103,494      | 83,169       | 56,832       | 43,872       | 38,230       | 40,395       | 40,749       | 43,578       | 53,093       | 79,173       |
| 1929..... | 109,684      | 102,380      | 89,088       | 68,728       | 52,901       | 41,643       | 42,001       | 40,896       | 49,010       | 61,976       | 86,873       | 115,876      |
| 1930..... | 140,723      | 141,552      | 133,172      | 105,708      | 77,420       | 61,167       | 54,253       | 46,967       | 42,589       | 46,938       | 59,269       | 82,925       |
| 1931..... | 104,913      | 101,307      | 95,188       | 69,936       | 45,920       | 35,348       | 32,782       | 36,438       | 43,056       | 56,215       | 65,668       | 99,971       |
| 1932..... | 116,700      | 111,554      | 96,422       | 74,660       | 56,676       | 44,829       | 36,661       | 31,471       | 30,305       | 36,683       | 54,989       | 91,118       |
| 1933..... | 111,642      | 104,833      | 88,675       | 67,285       | 45,824       | 38,181       | 42,705       | 44,970       | 47,789       | 50,177       | 59,528       | 91,211       |
| 1934..... | 123,503      | 120,177      | 101,776      | 74,197       | 49,212       | 39,790       | 40,609       | 44,904       | 46,053       | 55,262       | 73,401       | 105,565      |

<sup>1</sup> Quantities given are net weight.

Bureau of Agricultural Economics. Compiled from reports made by cold-storage establishments. Data for earlier years in 1928 Yearbook, table 432.

TABLE 431.—*Chickens, live: Average price per pound received by producers, United States, 1925-34*

| Year      | Jan. 15 | Feb. 15 | Mar. 15 | Apr. 15 | May 15 | June 15 | July 15 | Aug. 15 | Sept. 15 | Oct. 15 | Nov. 15 | Dec. 15 | Weighted average |
|-----------|---------|---------|---------|---------|--------|---------|---------|---------|----------|---------|---------|---------|------------------|
|           | Cents   | Cents   | Cents   | Cents   | Cents  | Cents   | Cents   | Cents   | Cents    | Cents   | Cents   | Cents   | Cents            |
| 1925..... | 18.5    | 19.1    | 20.6    | 21.1    | 22.0   | 21.6    | 21.4    | 20.5    | 20.4     | 20.0    | 19.2    | 19.5    | 19.9             |
| 1926..... | 20.9    | 21.5    | 21.9    | 23.1    | 23.7   | 23.9    | 23.6    | 22.1    | 21.4     | 20.8    | 20.0    | 19.8    | 21.2             |
| 1927..... | 20.1    | 21.1    | 21.3    | 21.8    | 21.7   | 20.2    | 19.9    | 19.7    | 19.4     | 19.7    | 19.4    | 19.2    | 20.0             |
| 1928..... | 19.6    | 20.1    | 20.1    | 20.8    | 21.5   | 21.5    | 21.9    | 21.6    | 22.3     | 22.0    | 21.5    | 21.2    | 21.4             |
| 1929..... | 21.6    | 22.1    | 22.7    | 23.8    | 24.4   | 24.6    | 23.7    | 22.7    | 22.4     | 21.5    | 20.3    | 19.1    | 21.7             |
| 1930..... | 19.8    | 20.4    | 20.6    | 21.1    | 20.0   | 19.0    | 17.4    | 17.3    | 17.8     | 17.4    | 16.1    | 15.3    | 17.8             |
| 1931..... | 15.7    | 15.1    | 16.1    | 16.7    | 15.9   | 16.1    | 15.8    | 16.2    | 15.7     | 14.4    | 14.4    | 13.9    | 15.0             |
| 1932..... | 13.3    | 12.6    | 12.6    | 12.6    | 12.2   | 11.4    | 11.7    | 11.7    | 11.6     | 10.7    | 10.1    | 9.2     | 11.1             |
| 1933..... | 9.3     | 9.4     | 9.1     | 9.8     | 10.4   | 10.0    | 10.4    | 9.8     | 9.5      | 9.3     | 8.8     | 8.6     | 9.1              |
| 1934..... | 9.4     | 10.2    | 10.7    | 11.1    | 11.2   | 11.2    | 11.4    | 12.7    | 11.8     | 11.7    | 11.7    | 11.7    | 11.2             |

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by census production in 1919 to obtain the United States averages from 1925 through May 1932, and by 1929 census sales thereafter. Yearly prices obtained by weighing annual State averages by sales in each State. Data for earlier years in 1928 Yearbook, table 433.

TABLE 432.—*Turkeys, live: Average price per pound received by producers, United States, 1924-25 to 1934-35*

| Season       | Oct. 15 | Nov. 15 | Dec. 15 | Jan. 15 | Season       | Oct. 15 | Nov. 15 | Dec. 15 | Jan. 15 |
|--------------|---------|---------|---------|---------|--------------|---------|---------|---------|---------|
|              | Cents   | Cents   | Cents   | Cents   |              | Cents   | Cents   | Cents   | Cents   |
| 1924-25..... | 23.3    | 24.2    | 25.8    | 26.2    | 1930-31..... | 21.0    | 20.1    | 19.9    | 21.6    |
| 1925-26..... | 24.0    | 28.3    | 31.1    | 31.7    | 1931-32..... | 17.9    | 18.3    | 19.4    | 18.0    |
| 1926-27..... | 26.6    | 29.8    | 32.8    | 31.6    | 1932-33..... | 13.2    | 12.9    | 10.9    | 10.2    |
| 1927-28..... | 26.4    | 30.8    | 32.3    | 29.8    | 1933-34..... | 11.3    | 11.8    | 11.1    | 11.6    |
| 1928-29..... | 27.2    | 31.2    | 30.5    | 28.2    | 1934-35..... | 12.7    | 14.6    | 16.0    | 16.0    |
| 1929-30..... | 27.2    | 27.1    | 23.5    | 23.7    |              |         |         |         |         |

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by census production in 1919 to obtain the United States averages from 1925 to October 1932, and by 1929 census sales thereafter.

TABLE 433.—*Eggs: Production and value in the United States, 1925-34*

| Year                    | Production | Value per dozen | Total value | Year      | Production | Value per dozen | Total value |
|-------------------------|------------|-----------------|-------------|-----------|------------|-----------------|-------------|
|                         | Millions   | Cents           | 1,000 dol.  |           | Millions   | Cents           | 1,000 dol.  |
| 1924 <sup>1</sup> ..... | 25,959     | 23.9            | 671,953     | 1930..... | 33,529     | 23.5            | 656,792     |
| 1925.....               | 27,910     | 30.2            | 701,405     | 1931..... | 34,442     | 17.3            | 496,397     |
| 1926.....               | 30,148     | 28.7            | 721,697     | 1932..... | 32,808     | 13.9            | 373,805     |
| 1927.....               | 31,761     | 24.9            | 633,349     | 1933..... | 31,828     | 13.6            | 359,686     |
| 1928.....               | 32,522     | 27.8            | 754,423     | 1934..... | 31,009     | 16.8            | 439,510     |
| 1929.....               | 35,276     | 29.5            | 793,805     |           |            |                 |             |

<sup>1</sup> Census report.

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TABLE 434.—Eggs: Production and value per dozen, by States, 1931-34

| State and division      | Production      |                 |                 |                 | Value per dozen |              |              |              |
|-------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------------|--------------|--------------|
|                         | 1931            | 1932            | 1933            | 1934            | 1931            | 1932         | 1933         | 1934         |
|                         | <i>Millions</i> | <i>Millions</i> | <i>Millions</i> | <i>Millions</i> | <i>Cents</i>    | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> |
| Maine.....              | 181             | 185             | 198             | 191             | 20.4            | 24.6         | 21.9         | 25.8         |
| New Hampshire.....      | 112             | 113             | 126             | 126             | 31.1            | 26.1         | 23.9         | 28.1         |
| Vermont.....            | 83              | 82              | 86              | 83              | 26.8            | 22.4         | 20.7         | 24.6         |
| Massachusetts.....      | 244             | 244             | 246             | 253             | 36.2            | 30.5         | 28.2         | 31.4         |
| Rhode Island.....       | 33              | 33              | 36              | 37              | 32.3            | 27.7         | 25.8         | 29.8         |
| Connecticut.....        | 179             | 192             | 203             | 210             | 32.3            | 27.0         | 25.8         | 29.0         |
| New York.....           | 1,244           | 1,225           | 1,270           | 1,301           | 25.1            | 20.9         | 19.8         | 22.9         |
| New Jersey.....         | 438             | 443             | 467             | 475             | 29.0            | 23.9         | 23.4         | 26.4         |
| Pennsylvania.....       | 1,550           | 1,504           | 1,514           | 1,571           | 22.8            | 18.2         | 17.6         | 20.8         |
| North Atlantic.....     | 4,064           | 4,021           | 4,146           | 4,247           | 26.2            | 21.6         | 20.5         | 23.8         |
| Ohio.....               | 1,721           | 1,646           | 1,592           | 1,579           | 18.2            | 14.1         | 13.8         | 16.8         |
| Indiana.....            | 1,291           | 1,219           | 1,173           | 1,150           | 16.2            | 12.5         | 12.1         | 15.4         |
| Illinois.....           | 1,703           | 1,606           | 1,597           | 1,573           | 16.1            | 12.5         | 11.9         | 15.5         |
| Michigan.....           | 1,012           | 1,057           | 1,036           | 1,016           | 18.3            | 14.6         | 13.4         | 16.9         |
| Wisconsin.....          | 1,268           | 1,163           | 1,166           | 1,272           | 16.5            | 13.8         | 13.1         | 16.2         |
| East North Central..... | 6,995           | 6,691           | 6,564           | 6,590           | 17.0            | 13.4         | 12.9         | 16.2         |
| Minnesota.....          | 1,452           | 1,316           | 1,332           | 1,281           | 14.6            | 11.7         | 11.5         | 14.4         |
| Iowa.....               | 2,562           | 2,320           | 2,356           | 2,333           | 14.8            | 11.8         | 11.1         | 14.3         |
| Missouri.....           | 2,286           | 2,076           | 2,024           | 1,814           | 14.2            | 11.0         | 10.3         | 13.6         |
| North Dakota.....       | 330             | 275             | 284             | 255             | 12.6            | 10.1         | 9.8          | 12.8         |
| South Dakota.....       | 706             | 556             | 582             | 467             | 13.0            | 10.7         | 10.0         | 13.0         |
| Nebraska.....           | 1,181           | 1,027           | 1,051           | 1,002           | 12.8            | 10.3         | 10.0         | 12.8         |
| Kansas.....             | 1,757           | 1,533           | 1,533           | 1,390           | 13.3            | 10.2         | 9.9          | 13.0         |
| West North Central..... | 10,274          | 9,103           | 9,162           | 8,542           | 13.9            | 11.0         | 10.6         | 13.7         |
| North Central.....      | 17,269          | 15,794          | 15,726          | 15,132          | 15.2            | 12.1         | 11.5         | 14.8         |
| Delaware.....           | 148             | 140             | 137             | 134             | 23.1            | 18.2         | 17.2         | 20.2         |
| Maryland.....           | 330             | 356             | 356             | 356             | 21.4            | 16.4         | 16.3         | 19.6         |
| Virginia.....           | 683             | 713             | 721             | 702             | 19.2            | 14.6         | 14.8         | 18.0         |
| West Virginia.....      | 343             | 336             | 324             | 311             | 19.9            | 14.7         | 15.0         | 18.0         |
| North Carolina.....     | 429             | 425             | 435             | 442             | 19.7            | 15.0         | 15.3         | 19.2         |
| South Carolina.....     | 194             | 177             | 178             | 174             | 21.5            | 16.2         | 16.2         | 19.5         |
| Georgia.....            | 579             | 578             | 561             | 544             | 19.4            | 15.4         | 15.3         | 18.9         |
| Florida.....            | 180             | 179             | 171             | 158             | 23.8            | 19.0         | 19.0         | 23.0         |
| South Atlantic.....     | 2,695           | 2,704           | 2,683           | 2,621           | 20.5            | 15.7         | 15.7         | 19.1         |
| Kentucky.....           | 609             | 601             | 595             | 592             | 15.9            | 11.9         | 11.5         | 15.1         |
| Tennessee.....          | 653             | 651             | 632             | 614             | 15.7            | 11.6         | 11.5         | 15.2         |
| Alabama.....            | 438             | 425             | 415             | 406             | 16.7            | 12.9         | 13.0         | 16.8         |
| Mississippi.....        | 353             | 358             | 328             | 308             | 16.3            | 12.2         | 12.4         | 15.5         |
| Arkansas.....           | 446             | 483             | 469             | 429             | 14.4            | 10.9         | 10.6         | 14.0         |
| Louisiana.....          | 260             | 246             | 243             | 237             | 17.7            | 13.2         | 13.3         | 16.2         |
| Oklahoma.....           | 920             | 878             | 851             | 778             | 13.0            | 9.7          | 10.3         | 13.6         |
| Texas.....              | 1,900           | 1,803           | 1,723           | 1,569           | 13.8            | 10.2         | 10.8         | 14.6         |
| South Central.....      | 5,579           | 5,445           | 5,256           | 4,935           | 14.6            | 10.9         | 11.2         | 14.8         |
| Montana.....            | 178             | 150             | 155             | 149             | 15.7            | 14.7         | 13.6         | 15.2         |
| Idaho.....              | 225             | 210             | 193             | 188             | 14.4            | 12.8         | 14.0         | 15.0         |
| Wyoming.....            | 75              | 68              | 65              | 62              | 18.4            | 15.7         | 14.9         | 17.0         |
| Colorado.....           | 333             | 289             | 271             | 268             | 16.2            | 12.8         | 12.5         | 14.8         |
| New Mexico.....         | 83              | 79              | 82              | 75              | 18.1            | 14.3         | 14.3         | 17.2         |
| Arizona.....            | 64              | 58              | 58              | 60              | 25.3            | 20.0         | 19.8         | 23.6         |
| Utah.....               | 319             | 274             | 253             | 273             | 16.7            | 14.3         | 14.5         | 16.2         |
| Nevada.....             | 30              | 27              | 23              | 26              | 19.9            | 17.9         | 18.4         | 20.0         |
| Washington.....         | 923             | 858             | 817             | 837             | 18.8            | 15.7         | 16.4         | 18.4         |
| Oregon.....             | 331             | 334             | 299             | 314             | 17.2            | 15.0         | 15.5         | 17.6         |
| California.....         | 2,276           | 1,997           | 1,801           | 1,819           | 19.9            | 17.2         | 17.2         | 19.0         |
| Western.....            | 4,835           | 4,344           | 4,017           | 4,071           | 18.8            | 16.1         | 16.3         | 18.0         |
| United States.....      | 34,442          | 32,308          | 31,828          | 31,006          | 17.3            | 13.9         | 13.6         | 16.8         |

TABLE 435.—Eggs: Receipts at 6 markets by State of origin, 1930-34

| Market and origin  | 1930               | 1931               | 1932               | 1933               | 1934               | Market and origin    | 1930               | 1931               | 1932               | 1933               | 1934               |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|----------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| <b>BOSTON</b>      | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <b>NEW YORK—CON.</b> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> |
| Illinois.....      | 161                | 191                | 138                | 88                 | 116                | Oregon.....          | 53                 | 94                 | 126                | 85                 | 68                 |
| Indiana.....       | 117                | 101                | 87                 | 100                | 66                 | Pennsylvania.....    | 214                | 166                | 179                | 231                | 246                |
| Iowa.....          | 272                | 323                | 282                | 283                | 304                | Tennessee.....       | 87                 | 36                 | 33                 | 50                 | 5                  |
| Kansas.....        | 171                | 211                | 204                | 172                | 135                | Utah.....            | 396                | 554                | 378                | 285                | 310                |
| Maine.....         | 64                 | 45                 | 35                 | 43                 | 39                 | Virginia.....        | 79                 | 39                 | 58                 | 76                 | 59                 |
| Massachusetts..... | 10                 | 9                  | 6                  | 11                 | 11                 | Washington.....      | 760                | 859                | 683                | 629                | 653                |
| Michigan.....      | 35                 | 47                 | 37                 | 35                 | 38                 | Wisconsin.....       | 49                 | 57                 | 34                 | 66                 | 92                 |
| Minnesota.....     | 229                | 229                | 157                | 136                | 159                | Other States.....    | 250                | 255                | 248                | 317                | 230                |
| Missouri.....      | 64                 | 80                 | 82                 | 80                 | 101                | <b>Total.....</b>    | <b>7,595</b>       | <b>7,601</b>       | <b>6,702</b>       | <b>6,885</b>       | <b>6,436</b>       |
| Nebraska.....      | 139                | 117                | 107                | 96                 | 84                 | <b>PHILADELPHIA</b>  |                    |                    |                    |                    |                    |
| New Hampshire..... | 28                 | 24                 | 23                 | 35                 | 29                 | California.....      | 112                | 97                 | 72                 | 41                 | 44                 |
| New York.....      | 27                 | 25                 | 15                 | 7                  | 4                  | Delaware.....        | 44                 | 24                 | 10                 | 15                 | 15                 |
| Ohio.....          | 44                 | 55                 | 70                 | 54                 | 36                 | Illinois.....        | 124                | 187                | 118                | 120                | 113                |
| Vermont.....       | 17                 | 15                 | 15                 | 19                 | 15                 | Indiana.....         | 44                 | 55                 | 25                 | 31                 | 28                 |
| Other States.....  | 195                | 164                | 181                | 171                | 156                | Iowa.....            | 125                | 154                | 139                | 182                | 164                |
| <b>Total.....</b>  | <b>1,573</b>       | <b>1,636</b>       | <b>1,439</b>       | <b>1,330</b>       | <b>1,293</b>       | Kansas.....          | 78                 | 101                | 121                | 105                | 69                 |
| <b>CHICAGO</b>     |                    |                    |                    |                    |                    | Maryland.....        | 55                 | 33                 | 19                 | 34                 | 25                 |
| California.....    | 33                 | 73                 | 24                 | 7                  | 11                 | Michigan.....        | 47                 | 69                 | 27                 | 36                 | 30                 |
| Illinois.....      | 150                | 127                | 219                | 368                | 296                | Minnesota.....       | 237                | 227                | 223                | 222                | 185                |
| Iowa.....          | 977                | 959                | 708                | 881                | 936                | Missouri.....        | 157                | 207                | 255                | 210                | 134                |
| Kansas.....        | 232                | 295                | 319                | 375                | 226                | Nebraska.....        | 39                 | 37                 | 37                 | 46                 | 30                 |
| Michigan.....      | 22                 | 13                 | 58                 | 68                 | 52                 | New York.....        | 22                 | 20                 | 31                 | 29                 | 32                 |
| Minnesota.....     | 772                | 778                | 401                | 375                | 472                | Ohio.....            | 47                 | 27                 | 23                 | 40                 | 61                 |
| Missouri.....      | 542                | 555                | 678                | 932                | 676                | Pennsylvania.....    | 287                | 177                | 119                | 160                | 208                |
| Nebraska.....      | 399                | 340                | 159                | 213                | 185                | Tennessee.....       | 25                 | 9                  | 20                 | 15                 | 8                  |
| North Dakota.....  | 40                 | 51                 |                    | 39                 | 21                 | Virginia.....        | 86                 | 37                 | 39                 | 50                 | 55                 |
| Oklahoma.....      | 35                 | 34                 | 97                 | 48                 | 39                 | Washington.....      | 72                 | 76                 | 56                 | 47                 | 54                 |
| South Dakota.....  | 508                | 459                | 279                | 310                | 202                | West Virginia.....   | 4                  | 3                  | 5                  | 3                  | 5                  |
| Texas.....         | 13                 | 21                 | 17                 | 5                  |                    | Wisconsin.....       | 65                 | 67                 | 45                 | 31                 | 30                 |
| Wisconsin.....     | 490                | 382                | 254                | 339                | 458                | Other States.....    | 89                 | 143                | 112                | 113                | 126                |
| Other States.....  | 262                | 227                | 199                | 175                | 123                | <b>Total.....</b>    | <b>1,759</b>       | <b>1,730</b>       | <b>1,496</b>       | <b>1,530</b>       | <b>1,406</b>       |
| <b>Total.....</b>  | <b>4,475</b>       | <b>4,814</b>       | <b>3,412</b>       | <b>4,135</b>       | <b>3,697</b>       | <b>SAN FRANCISCO</b> |                    |                    |                    |                    |                    |
| <b>NEW YORK</b>    |                    |                    |                    |                    |                    | California.....      | 749                | 730                | 700                | 710                | 742                |
| California.....    | 698                | 589                | 501                | 340                | 228                | Idaho.....           | 2                  | 2                  | 2                  | 7                  | 9                  |
| Delaware.....      | 39                 | 28                 | 35                 | 49                 | 46                 | Oregon.....          | 8                  | 20                 | 12                 | 17                 | 10                 |
| Iowa.....          | 70                 | 204                | 156                | 77                 | 91                 | Washington.....      | (1)                | 3                  | 7                  | 2                  | 4                  |
| Illinois.....      | 829                | 704                | 631                | 540                | 574                | Other States.....    | 6                  | 3                  | 4                  | 12                 | 18                 |
| Indiana.....       | 454                | 387                | 329                | 319                | 244                | <b>Total.....</b>    | <b>765</b>         | <b>758</b>         | <b>725</b>         | <b>748</b>         | <b>783</b>         |
| Iowa.....          | 1,388              | 1,354              | 1,070              | 1,151              | 1,083              | <b>LOS ANGELES</b>   |                    |                    |                    |                    |                    |
| Kansas.....        | 275                | 255                | 278                | 300                | 206                | California.....      | 761                | 730                | 539                | 542                | 568                |
| Kentucky.....      | 31                 | 24                 | 40                 | 38                 | 14                 | Idaho.....           | 22                 | 6                  | 9                  | 12                 | 20                 |
| Maryland.....      | 70                 | 36                 | 41                 | 54                 | 65                 | Oregon.....          | 5                  | 14                 | 13                 | 20                 | 20                 |
| Michigan.....      | 70                 | 80                 | 62                 | 55                 | 62                 | Utah.....            | 52                 | 3                  | 15                 | 42                 | 33                 |
| Minnesota.....     | 279                | 353                | 469                | 535                | 588                | Other States.....    | 4                  | 14                 | 16                 | 39                 | 36                 |
| Missouri.....      | 276                | 328                | 286                | 373                | 237                | <b>Total.....</b>    | <b>844</b>         | <b>767</b>         | <b>592</b>         | <b>655</b>         | <b>707</b>         |
| Nebraska.....      | 166                | 273                | 216                | 178                | 178                |                      |                    |                    |                    |                    |                    |
| New Jersey.....    | 228                | 232                | 201                | 214                | 177                |                      |                    |                    |                    |                    |                    |
| New York.....      | 625                | 468                | 354                | 619                | 772                |                      |                    |                    |                    |                    |                    |
| Ohio.....          | 209                | 226                | 294                | 304                | 210                |                      |                    |                    |                    |                    |                    |

¹Not over 500 cases.

Bureau of Agricultural Economics; compiled from reports of Bureau representatives in the various markets. Reported in cases of 30 dozen.

TABLE 436.—Eggs: Receipts at 5 markets, 1919-34

| Year      | New York           | Chi-<br>cago       | Phila-<br>del-<br>phia | Bos-<br>ton        | San<br>Fran-<br>cisco | Year      | New York           | Chi-<br>cago       | Phila-<br>del-<br>phia | Bos-<br>ton        | San<br>Fran-<br>cisco |
|-----------|--------------------|--------------------|------------------------|--------------------|-----------------------|-----------|--------------------|--------------------|------------------------|--------------------|-----------------------|
|           | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i>     | <i>1,000 cases</i> | <i>1,000 cases</i>    |           | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i>     | <i>1,000 cases</i> | <i>1,000 cases</i>    |
| 1919..... | 6,008              | 4,617              | 1,704                  | 1,659              | 698                   | 1927..... | 7,048              | 4,901              | 1,549                  | 1,960              | 750                   |
| 1920..... | 4,991              | 4,154              | 1,896                  | 1,648              | 757                   | 1928..... | 7,288              | 4,601              | 1,735                  | 1,757              | 756                   |
| 1921..... | 6,579              | 4,155              | 1,642                  | 1,823              | 811                   | 1929..... | 7,129              | 4,368              | 1,697                  | 1,718              | 766                   |
| 1922..... | 6,821              | 4,684              | 1,703                  | 1,970              | 838                   | 1930..... | 7,595              | 4,475              | 1,769                  | 1,673              | 765                   |
| 1923..... | 7,156              | 5,009              | 1,727                  | 1,944              | 855                   | 1931..... | 7,601              | 4,314              | 1,730                  | 1,636              | 758                   |
| 1924..... | 6,543              | 4,679              | 1,595                  | 1,829              | 760                   | 1932..... | 6,702              | 3,412              | 1,496                  | 1,439              | 725                   |
| 1925..... | 6,894              | 4,498              | 1,572                  | 1,833              | 743                   | 1933..... | 6,885              | 4,135              | 1,530                  | 1,530              | 748                   |
| 1926..... | 6,818              | 4,575              | 1,566                  | 1,808              | 744                   | 1934..... | 6,436              | 3,697              | 1,406                  | 1,293              | 783                   |

Bureau of Agricultural Economics. Compiled from reports of Bureau representatives in the various markets. Reported in cases of 30 dozen.

## DAIRY AND POULTRY STATISTICS

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TABLE 437.—*Eggs: Receipts at 5 markets, by months, 1931-34*

| Market and year | Jan.               | Feb.               | Mar.               | Apr.               | May                | June               | July               | Aug.               | Sept.              | Oct.               | Nov.               | Dec.               | Total              |
|-----------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|                 | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> |
| Boston:         |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |
| 1931.....       | 126                | 153                | 198                | 207                | 219                | 188                | 125                | 108                | 95                 | 77                 | 62                 | 78                 | 1,636              |
| 1932.....       | 98                 | 138                | 181                | 164                | 201                | 155                | 117                | 109                | 79                 | 71                 | 64                 | 62                 | 1,439              |
| 1933.....       | 92                 | 98                 | 145                | 207                | 175                | 141                | 132                | 91                 | 58                 | 68                 | 58                 | 65                 | 1,330              |
| 1934.....       | 88                 | 118                | 164                | 170                | 156                | 142                | 98                 | 101                | 68                 | 71                 | 66                 | 51                 | 1,293              |
| New York:       |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |
| 1931.....       | 478                | 530                | 940                | 1,116              | 1,052              | 868                | 568                | 516                | 484                | 398                | 304                | 347                | 7,601              |
| 1932.....       | 475                | 554                | 663                | 827                | 873                | 689                | 534                | 533                | 438                | 417                | 345                | 354                | 6,702              |
| 1933.....       | 593                | 491                | 769                | 934                | 1,021              | 710                | 588                | 493                | 369                | 352                | 269                | 296                | 6,885              |
| 1934.....       | 412                | 605                | 777                | 752                | 815                | 682                | 527                | 420                | 374                | 373                | 337                | 382                | 6,436              |
| Philadelphia:   |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |
| 1931.....       | 133                | 148                | 189                | 205                | 184                | 186                | 141                | 132                | 124                | 92                 | 97                 | 99                 | 1,730              |
| 1932.....       | 114                | 105                | 136                | 193                | 171                | 153                | 114                | 110                | 125                | 101                | 90                 | 84                 | 1,496              |
| 1933.....       | 120                | 118                | 161                | 183                | 181                | 137                | 113                | 105                | 120                | 97                 | 88                 | 107                | 1,530              |
| 1934.....       | 111                | 113                | 161                | 170                | 149                | 142                | 109                | 104                | 74                 | 91                 | 91                 | 91                 | 1,406              |
| Chicago:        |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |
| 1931.....       | 231                | 367                | 634                | 867                | 709                | 559                | 290                | 238                | 191                | 96                 | 61                 | 71                 | 4,314              |
| 1932.....       | 178                | 224                | 378                | 657                | 663                | 437                | 258                | 219                | 161                | 104                | 80                 | 73                 | 3,412              |
| 1933.....       | 189                | 229                | 491                | 881                | 1,049              | 524                | 260                | 206                | 133                | 76                 | 37                 | 60                 | 4,135              |
| 1934.....       | 125                | 267                | 647                | 889                | 736                | 445                | 217                | 146                | 100                | 53                 | 29                 | 43                 | 3,697              |
| San Francisco:  |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |
| 1931.....       | 58                 | 66                 | 85                 | 83                 | 72                 | 61                 | 56                 | 59                 | 49                 | 59                 | 54                 | 56                 | 758                |
| 1932.....       | 72                 | 68                 | 77                 | 75                 | 63                 | 62                 | 57                 | 64                 | 51                 | 46                 | 45                 | 45                 | 725                |
| 1933.....       | 57                 | 52                 | 73                 | 76                 | 76                 | 63                 | 59                 | 58                 | 53                 | 58                 | 61                 | 62                 | 748                |
| 1934.....       | 72                 | 62                 | 75                 | 70                 | 71                 | 61                 | 58                 | 57                 | 49                 | 67                 | 66                 | 75                 | 783                |

Bureau of Agricultural Economics. Compiled from reports of Bureau representatives in the various markets. Reported in cases of 30 dozen. See 1927 Yearbook, table 453, and 1932 Yearbook, table 431, for data for earlier years.

TABLE 438.—*Eggs, shell and frozen: Cold-storage holdings, United States, 1925-34*

| Kind and year             | Jan. 1             | Feb. 1             | Mar. 1             | Apr. 1             | May 1              | June 1             | July 1             | Aug. 1             | Sept. 1            | Oct. 1             | Nov. 1             | Dec. 1             |
|---------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|                           | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> | <i>1,000 cases</i> |
| Shell eggs: <sup>1</sup>  |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |
| 1925.....                 | 1,050              | 81                 | 21                 | 1,240              | 4,872              | 7,712              | 9,482              | 10,024             | 9,873              | 8,612              | 6,322              | 3,786              |
| 1926.....                 | 1,683              | 578                | 77                 | 872                | 3,735              | 7,236              | 9,133              | 9,845              | 9,573              | 8,048              | 5,888              | 3,215              |
| 1927.....                 | 1,096              | 253                | 92                 | 1,868              | 5,501              | 8,962              | 10,565             | 10,746             | 9,650              | 7,960              | 5,485              | 2,956              |
| 1928.....                 | 882                | 26                 | 66                 | 1,087              | 4,515              | 8,168              | 10,002             | 10,496             | 9,944              | 8,542              | 6,247              | 3,542              |
| 1929.....                 | 1,415              | 248                | 11                 | 559                | 3,952              | 6,705              | 8,510              | 8,962              | 8,547              | 7,195              | 4,890              | 2,631              |
| 1930.....                 | 704                | 139                | 84                 | 2,231              | 5,766              | 9,173              | 10,743             | 11,198             | 10,375             | 9,174              | 6,785              | 4,154              |
| 1931.....                 | 1,894              | 735                | 408                | 1,893              | 5,162              | 7,887              | 9,507              | 9,504              | 9,016              | 7,960              | 5,745              | 3,447              |
| 1932.....                 | 1,475              | 663                | 258                | 700                | 2,982              | 5,380              | 6,339              | 6,431              | 5,960              | 4,895              | 3,225              | 1,199              |
| 1933.....                 | 159                | 75                 | 163                | 1,833              | 4,857              | 8,062              | 9,364              | 9,507              | 8,944              | 7,466              | 5,175              | 2,641              |
| 1934.....                 | 731                | 50                 | 90                 | 1,208              | 4,640              | 7,819              | 8,965              | 8,961              | 7,938              | 6,803              | 4,633              | 2,380              |
| Frozen eggs: <sup>2</sup> |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |
| 1925.....                 | 21,303             | 16,292             | 11,364             | 11,353             | 19,579             | 29,544             | 38,379             | 42,855             | 47,099             | 44,299             | 45,314             | 39,336             |
| 1926.....                 | 33,905             | 29,256             | 24,167             | 21,849             | 25,739             | 34,815             | 45,688             | 51,810             | 52,634             | 51,062             | 44,966             | 38,620             |
| 1927.....                 | 38,593             | 31,207             | 26,053             | 33,272             | 52,053             | 71,805             | 81,263             | 81,418             | 77,508             | 71,208             | 62,066             | 54,703             |
| 1928.....                 | 47,020             | 38,575             | 31,362             | 34,411             | 51,532             | 67,941             | 77,744             | 81,870             | 89,196             | 82,255             | 73,327             | 64,201             |
| 1929.....                 | 56,181             | 48,055             | 38,250             | 34,918             | 51,825             | 71,580             | 84,766             | 91,488             | 86,693             | 81,541             | 70,351             | 61,772             |
| 1930.....                 | 53,644             | 44,080             | 35,192             | 49,751             | 76,664             | 106,904            | 115,134            | 116,272            | 113,138            | 106,631            | 98,359             | 89,571             |
| 1931.....                 | 83,184             | 75,685             | 73,889             | 78,051             | 91,517             | 106,607            | 113,513            | 114,700            | 110,271            | 103,302            | 94,816             | 86,407             |
| 1932.....                 | 79,198             | 72,439             | 68,024             | 69,031             | 81,920             | 94,978             | 100,485            | 99,112             | 92,967             | 84,137             | 74,314             | 64,150             |
| 1933.....                 | 55,339             | 45,448             | 40,450             | 45,090             | 62,944             | 85,323             | 103,019            | 107,660            | 102,449            | 93,182             | 82,302             | 72,348             |
| 1934.....                 | 61,419             | 49,910             | 39,181             | 38,679             | 62,632             | 93,947             | 116,058            | 121,564            | 111,994            | 99,951             | 88,715             | 76,073             |

<sup>1</sup> 30-dozen cases.

<sup>2</sup> Quantities given are net weight. 35 pounds of frozen eggs are approximately equivalent to 1 case of 30 dozen shell eggs.

Bureau of Agricultural Economics; compiled from reports made by cold-storage establishments. Data for earlier years in 1928 Yearbook, tables 488 and 493.



TABLE 439.—*Eggs: Average price per dozen received by producers, United States, 1925-34*

| Year      | Jan.<br>15   | Feb.<br>15   | Mar.<br>15   | Apr.<br>15   | May<br>15    | June<br>15   | July<br>15   | Aug.<br>15   | Sept.<br>15  | Oct.<br>15   | Nov.<br>15   | Dec.<br>15   | Weight-<br>ed av-<br>erage |
|-----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------------------|
|           | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i>               |
| 1925..... | 48.6         | 35.7         | 23.9         | 24.2         | 24.8         | 26.1         | 27.9         | 30.0         | 31.1         | 37.7         | 46.8         | 48.1         | 30.4                       |
| 1926..... | 36.3         | 28.9         | 24.1         | 24.8         | 25.2         | 25.7         | 25.7         | 26.4         | 31.5         | 36.8         | 44.9         | 47.6         | 28.8                       |
| 1927..... | 36.9         | 29.0         | 20.8         | 20.3         | 19.8         | 17.8         | 20.7         | 23.4         | 29.4         | 35.6         | 41.6         | 43.3         | 25.0                       |
| 1928..... | 38.2         | 29.1         | 23.4         | 22.8         | 24.2         | 23.9         | 25.6         | 27.4         | 31.4         | 34.9         | 39.6         | 42.9         | 28.0                       |
| 1929..... | 33.0         | 31.9         | 28.0         | 23.0         | 24.4         | 26.1         | 27.2         | 29.8         | 33.9         | 38.4         | 44.2         | 45.8         | 29.9                       |
| 1930..... | 38.4         | 31.8         | 21.3         | 21.5         | 20.0         | 18.6         | 18.8         | 20.6         | 25.3         | 26.5         | 31.7         | 26.8         | 23.7                       |
| 1931..... | 22.1         | 14.1         | 17.0         | 16.2         | 13.3         | 14.1         | 14.8         | 17.3         | 19.1         | 22.7         | 26.4         | 25.6         | 17.5                       |
| 1932..... | 17.2         | 12.8         | 10.4         | 10.2         | 10.3         | 10.6         | 12.0         | 14.7         | 17.2         | 22.5         | 26.1         | 28.1         | 14.2                       |
| 1933..... | 21.4         | 11.0         | 10.1         | 10.3         | 11.8         | 10.1         | 13.1         | 13.3         | 16.3         | 20.8         | 24.0         | 21.6         | 13.8                       |
| 1934..... | 17.6         | 15.8         | 14.4         | 13.5         | 13.3         | 13.2         | 14.1         | 17.2         | 21.9         | 23.7         | 28.6         | 27.0         | 17.0                       |

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by Census production 1919 to obtain the United States averages from 1925 through May 1932, and by 1929 census sales thereafter. Yearly prices obtained by weighting annual State averages by sales in each State. Data for earlier years in 1928 Yearbook, table 492.

TABLE 440.—*Eggs: Average wholesale price per dozen at 5 markets, by months, specified years*

| Market, grade, and year | Jan.         | Feb.         | Mar.         | Apr.         | May          | June         | July         | Aug.         | Sept.        | Oct.         | Nov.         | Dec.         | Aver-<br>age |
|-------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| <b>New York:</b>        |              |              |              |              |              |              |              |              |              |              |              |              |              |
| Fresh firsts:           | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> | <i>Cents</i> |
| 1925.....               | 59           | 44           | 30           | 29           | 32           | 33           | 33           | 33           | 37           | 43           | 56           | 61           | 40           |
| 1926.....               | 38           | 31           | 29           | 32           | 31           | 30           | 29           | 31           | 38           | 40           | 50           | 48           | 36           |
| 1927.....               | 42           | 32           | 25           | 26           | 23           | 23           | 25           | 28           | 34           | 40           | 44           | 45           | 32           |
| 1928.....               | 45           | 32           | 29           | 28           | 30           | 29           | 30           | 31           | 33           | 32           | 37           | 37           | 33           |
| 1929.....               | 36           | 41           | 33           | 28           | 31           | 31           | 32           | 34           | 36           | 40           | 48           | 51           | 37           |
| 1930.....               | 42           | 35           | 26           | 27           | 23           | 24           | 22           | 25           | 25           | 26           | 31           | 29           | 28           |
| 1931.....               | 24           | 20           | 22           | 20           | 19           | 19           | 20           | 22           | 24           | 24           | 28           | 27           | 22           |
| 1932.....               | 19           | 18           | 14           | 14           | 15           | 14           | 15           | 17           | 21           | 24           | 31           | 31           | 19           |
| 1933.....               | 23           | 14           | 14           | 13           | 14           | 13           | 15           | 14           | 18           | 20           | 26           | 22           | 17           |
| 1934.....               | 22           | 18           | 18           | 17           | 16           | 16           | 17           | 21           | 22           | 24           | 28           | 27           | 20           |
| <b>Chicago:</b>         |              |              |              |              |              |              |              |              |              |              |              |              |              |
| Fresh firsts:           |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1930.....               | 40           | 34           | 24           | 24           | 21           | 22           | 21           | 25           | 26           | 28           | 33           | 28           | 27           |
| 1931.....               | 21           | 16           | 19           | 17           | 17           | 16           | 18           | 19           | 20           | 24           | 29           | 24           | 20           |
| 1932.....               | 18           | 14           | 12           | 12           | 12           | 12           | 13           | 16           | 19           | 23           | 30           | 29           | 18           |
| 1933.....               | 21           | 12           | 12           | 12           | 13           | 12           | 14           | 13           | 16           | 19           | 23           | 19           | 16           |
| 1934.....               | 20           | 17           | 16           | 16           | 15           | 15           | 15           | 19           | 21           | 23           | 27           | 27           | 19           |
| <b>Boston:</b>          |              |              |              |              |              |              |              |              |              |              |              |              |              |
| Western firsts:         |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1930.....               | 44           | 37           | 26           | 26           | 24           | 24           | 22           | 25           | 25           | 26           | 34           | 28           | 39           |
| 1931.....               | 25           | 18           | 21           | 20           | 13           | 17           | 19           | 20           | 21           | 25           | 30           | 27           | 22           |
| 1932.....               | 19           | 17           | 14           | 14           | 15           | 14           | 15           | 18           | 21           | 24           | 30           | 32           | 20           |
| 1933.....               | 24           | 14           | 14           | 14           | 14           | 14           | 15           | 15           | 18           | 21           | 24           | 20           | 17           |
| 1934.....               | 23           | 21           | 18           | 17           | 17           | 17           | 17           | 21           | 23           | 24           | 28           | 27           | 21           |
| <b>Philadelphia:</b>    |              |              |              |              |              |              |              |              |              |              |              |              |              |
| Extra firsts:           |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1930.....               | 46           | 40           | 28           | 28           | 26           | 27           | 28           | 32           | 33           | 36           | 44           | 32           | 33           |
| 1931.....               | 28           | 20           | 22           | 21           | 19           | 21           | 24           | 24           | 26           | 29           | 34           | 31           | 25           |
| 1932.....               | 23           | 18           | 15           | 15           | 16           | 16           | 17           | 22           | 23           | 28           | 35           | 34           | 22           |
| 1933.....               | 27           | 15           | 15           | 15           | 16           | 15           | 19           | 18           | 22           | 26           | 32           | 28           | 21           |
| 1934.....               | 23           | 22           | 19           | 19           | 19           | 20           | 20           | 24           | 28           | 27           | 33           | 33           | 24           |
| <b>San Francisco:</b>   |              |              |              |              |              |              |              |              |              |              |              |              |              |
| Fresh extras:           |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1930.....               | 36           | 28           | 28           | 28           | 27           | 26           | 26           | 31           | 37           | 40           | 41           | 27           | 31           |
| 1931.....               | 22           | 19           | 20           | 20           | 20           | 20           | 22           | 26           | 31           | 38           | 33           | 29           | 25           |
| 1932.....               | 20           | 17           | 17           | 16           | 16           | 17           | 18           | 20           | 27           | 30           | 33           | 28           | 22           |
| 1933.....               | 24           | 15           | 16           | 16           | 17           | 18           | 19           | 21           | 26           | 29           | 29           | 24           | 21           |
| 1934.....               | 19           | 17           | 16           | 16           | 16           | 18           | 21           | 26           | 28           | 34           | 32           | 27           | 22           |

Bureau of Agricultural Economics. Compiled from the Bureau of Labor Statistics wholesale-price bulletins, monthly, except prices for San Francisco, which are from the Pacific Dairy Review.

TABLE 441.—*Eggs and egg products: International trade, average 1925-29, annual 1930-33*

## EGGS IN THE SHELL

|  | Average 1925-1929 |                | Calendar year  |                |                |                |                |                |                   |                |
|--|-------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-------------------|----------------|
|  |                   |                | 1930           |                | 1931           |                | 1932           |                | 1933 <sup>1</sup> |                |
|  | Exports           | Imports        | Exports        | Imports        | Exports        | Imports        | Exports        | Imports        | Exports           | Imports        |
| PRINCIPAL EXPORT-<br>ING COUNTRIES         | 1,000<br>dozen    | 1,000<br>dozen | 1,000<br>dozen | 1,000<br>dozen | 1,000<br>dozen | 1,000<br>dozen | 1,000<br>dozen | 1,000<br>dozen | 1,000<br>dozen    | 1,000<br>dozen |
| Netherlands.....                           | 98,429            | 8,965          | 124,859        | 1,324          | 126,689        | 425            | 117,667        | 401            | 83,740            | 347            |
| Union of Soviet So-<br>cialist Republics.. | 86,978            | 0              | 14,471         | 163            | 30,038         | 100            | 10,554         | 185            | 2,895             | 121            |
| Poland.....                                | 76,215            | 493            | 80,999         | 50             | 70,687         | 2              | 54,971         | 1              | 34,547            | 40             |
| Denmark.....                               | 67,641            | 225            | 71,852         | 52             | 81,193         | 0              | 92,059         | 0              | 89,195            | 0              |
| China.....                                 | 56,278            | 0              | 51,360         | 0              | 50,944         | 0              | 29,657         | 2 207          | 29,555            | 126            |
| Irish Free State..                         | 47,058            | 449            | 47,355         | 106            | 46,097         | 103            | 33,831         | 80             | 34,694            | -----          |
| Belgium.....                               | 41,430            | 1,419          | 42,925         | 1,703          | 47,778         | 713            | 51,860         | 601            | 27,569            | 1,998          |
| Italy.....                                 | 25,943            | 17,969         | 13,701         | 33,543         | 13,205         | 36,213         | 5,692          | 51,425         | 1,464             | 12,908         |
| France.....                                | 24,536            | 11,499         | 23,512         | 16,422         | 7,854          | 35,174         | 1,199          | 4,759          | 547               | 23,129         |
| United States.....                         | 22,521            | 350            | 18,579         | 317            | 7,684          | 309            | 2,319          | 244            | 1,866             | 251            |
| Hungary.....                               | 18,026            | 338            | 19,367         | 205            | 17,609         | 72             | 9,402          | 16             | 16,925            | 51             |
| Bulgaria.....                              | 17,258            | 0              | 28,239         | 0              | 32,876         | 0              | 27,637         | 0              | 23,081            | 0              |
| Rumania.....                               | 15,011            | 1              | 24,725         | 2              | 19,008         | 3              | 23,232         | 1              | -----             | -----          |
| Morocco.....                               | 14,985            | 0              | 14,629         | 0              | 13,828         | 0              | 13,773         | 0              | 14,566            | 0              |
| Egypt.....                                 | 10,979            | 6              | 8,202          | 0              | 10,445         | 0              | 16,986         | 0              | 14,231            | 0              |
| Algeria.....                               | 5,830             | 17             | 4,233          | 19             | 1,898          | 46             | 1,233          | 3 107          | 1,846             | -----          |
| Lithuania.....                             | 5,313             | 0              | 4,599          | 0              | 5,083          | 0              | 3,816          | 0              | 2,400             | 0              |
| Sweden.....                                | 4,422             | 679            | 6,543          | 623            | 4,289          | 1,971          | 6,477          | 293            | 4,372             | 328            |
| Union of South<br>Africa.....              | 3,477             | 113            | 6,158          | 47             | 6,143          | 90             | 5,458          | 28             | 4,711             | 5              |
| Estonia.....                               | 1,428             | 4              | 2,065          | 1              | 2,197          | 0              | 2,066          | 0              | 2,007             | 0              |
| Norway.....                                | 570               | 111            | 1,056          | 114            | 1,153          | 134            | 2,504          | 76             | 2,581             | 88             |
| Finland.....                               | 58                | 37             | 636            | 12             | 2,771          | 1              | 9,211          | 1              | 14,662            | -----          |
| Total.....                                 | 644,286           | 42,675         | 610,066        | 54,708         | 599,469        | 75,356         | 526,604        | 63,425         | 406,904           | 39,392         |
| PRINCIPAL IMPORT-<br>ING COUNTRIES         |                   |                |                |                |                |                |                |                |                   |                |
| United Kingdom....                         | 973               | 238,350        | 715            | 264,306        | 227            | 258,729        | 158            | 199,332        | -----             | 183,739        |
| Germany.....                               | 591               | 220,035        | 159            | 219,909        | 204            | 193,915        | 87             | 197,037        | 39                | 120,953        |
| Spain.....                                 | 15                | 34,479         | 12             | 39,154         | 15             | 33,370         | 14             | 34,218         | 14                | 55,706         |
| Austria.....                               | 1,730             | 22,033         | 1,942          | 25,869         | 1,452          | 25,617         | 208            | 16,797         | 246               | 13,181         |
| Japan.....                                 | 0                 | 20,465         | 0              | 8,167          | 0              | 12,142         | 0              | 161            | 0                 | 44             |
| Switzerland.....                           | 13                | 17,132         | 9              | 20,221         | 24             | 23,003         | 21             | 24,752         | 3                 | 22,016         |
| Argentina.....                             | 1,518             | 9,791          | 969            | 14,846         | 2,606          | 8,318          | 2,480          | 1,004          | 2,690             | 376            |
| Cuba.....                                  | 0                 | 8,793          | 0              | 1,314          | 0              | 55             | 0              | 5              | 0                 | -----          |
| Philippine Islands..                       | 0                 | 5,935          | 0              | 6,953          | 0              | 10,990         | 0              | 9,899          | 0                 | -----          |
| Czechoslovakia....                         | 1,828             | 4,917          | 2,622          | 7,936          | 1,223          | 12,136         | 326            | 11,894         | 4                 | 6,932          |
| Mexico.....                                | 0                 | 4,202          | 0              | 4,349          | 0              | 87             | 0              | 24             | 3                 | 17             |
| British Malaya.....                        | 366               | 3,638          | 270            | 4,341          | 218            | 3,366          | 166            | 1,588          | 201               | 1,896          |
| Canada.....                                | 1,365             | 2,244          | 189            | 2,903          | 634            | 68             | 273            | 40             | 1,988             | 25             |
| Chile.....                                 | 17                | 67             | 19             | 337            | 11             | 164            | 227            | 0              | 365               | 0              |
| Total.....                                 | 8,416             | 592,081        | 6,906          | 620,615        | 6,614          | 581,960        | 3,960          | 496,751        | 5,553             | 404,890        |

<sup>1</sup> Preliminary.<sup>2</sup> Does not include Manchuria after June 30, 1932.<sup>3</sup> International Yearbook of Agricultural Statistics.

TABLE 441.—*Eggs and egg products: International trade, average 1925-29, annual 1930-33—Continued*

## EGGS NOT IN THE SHELL

|                                    | Average 1925-1929 |                 | Calendar year   |                 |                 |                 |                      |                 |                   |                 |
|------------------------------------|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------------|-----------------|-------------------|-----------------|
|                                    |                   |                 | 1930            |                 | 1931            |                 | 1932                 |                 | 1933 <sup>1</sup> |                 |
|                                    | Exports           | Imports         | Exports         | Imports         | Exports         | Imports         | Exports              | Imports         | Exports           | Imports         |
| PRINCIPAL EXPORT-<br>ING COUNTRIES | 1,000<br>pounds   | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds      | 1,000<br>pounds | 1,000<br>pounds   | 1,000<br>pounds |
| China.....                         | 128,990           | 0               | 153,304         | 0               | 132,606         | 0               | <sup>2</sup> 119,361 | 0               | 105,981           | 0               |
| Yugoslavia.....                    | 57,955            | <sup>4</sup> 1  | 67,084          | 7               | 57,997          | 2               | 36,356               | 11              | 40,310            | 0               |
| Turkey.....                        | 23,486            | 0               | 39,403          | 0               | 54,101          | 0               | 54,570               | 0               | -----             | 0               |
| Total.....                         | 210,431           | 1               | 259,791         | 7               | 244,704         | 2               | 210,287              | 11              | 146,291           | 0               |
| PRINCIPAL IMPORT-<br>ING COUNTRIES |                   |                 |                 |                 |                 |                 |                      |                 |                   |                 |
| United Kingdom....                 | 598               | 65,731          | 157             | 85,630          | 111             | 83,286          | 64                   | 85,326          | 0                 | 70,590          |
| United States.....                 | 464               | 24,914          | 196             | 16,156          | 255             | 7,661           | 44                   | 3,085           | 49                | 3,664           |
| Germany.....                       | 2,098             | 18,252          | 2,065           | 27,231          | 1,908           | 21,031          | 1,365                | 23,840          | 1,374             | 10,818          |
| France.....                        | 238               | 7,375           | 255             | 13,030          | 188             | 16,608          | 134                  | 6,177           | 48                | 6,898           |
| Netherlands.....                   | 860               | 4,355           | 1,009           | 5,588           | 565             | 4,962           | 793                  | 4,094           | 431               | 4,221           |
| Canada.....                        | 0                 | 1,700           | 0               | 1,758           | 0               | 120             | 0                    | 117             | 0                 | 37              |
| Italy.....                         | 16                | 1,317           | 12              | 1,854           | 9               | 2,690           | 4                    | 2,058           | 5                 | 2,370           |
| Belgium.....                       | 216               | 1,137           | 486             | 1,642           | 1,665           | 2,730           | 1,537                | 2,373           | 1,184             | 2,030           |
| Irish Free State....               | 19                | 1,031           | 19              | 1,126           | 23              | 1,202           | 30                   | 1,140           | -----             | 200             |
| Sweden.....                        | 5                 | 859             | 19              | 1,073           | 0               | 1,126           | 0                    | 848             | 0                 | 714             |
| Czechoslovakia....                 | 13                | 850             | 7               | 1,579           | 3               | 1,957           | 3                    | 1,609           | 0                 | 860             |
| Austria.....                       | 8                 | 680             | 1               | 1,290           | 0               | 950             | 0                    | 939             | 0                 | 621             |
| Denmark.....                       | 7                 | 512             | 7               | 570             | 15              | 636             | 3                    | 524             | 55                | 469             |
| Union of South<br>Africa.....      | 16                | 54              | 31              | 7               | 3               | 10              | 1                    | 8               | 0                 | 8               |
| Norway.....                        | 0                 | 11              | 0               | 22              | 0               | 20              | 2                    | 21              | 0                 | 13              |
| Total.....                         | 4,558             | 128,778         | 4,264           | 158,606         | 5,045           | 144,989         | 3,980                | 132,159         | 3,146             | 103,513         |

<sup>1</sup> Preliminary.<sup>2</sup> Does not include Manchuria after June 30, 1932.<sup>4</sup> 2-year average.

Bureau of Agricultural Economics; official sources except where otherwise noted.

In countries reporting other than dozens of eggs, the conversion factor used is 1½ pounds equals 1 dozen.

# STATISTICS OF FOREIGN TRADE IN AGRICULTURAL PRODUCTS

TABLE 442.—Summary of exports and imports, United States, 1909-10 to 1933-34

| Year<br>beginning<br>July | Total<br>exports | Agricultural exports <sup>1</sup> |                                    |                |                  | Agricultural<br>imports <sup>1</sup> |                                    | Forest products                              |                  |                  |                  |                           |                  |
|---------------------------|------------------|-----------------------------------|------------------------------------|----------------|------------------|--------------------------------------|------------------------------------|--|------------------|------------------|------------------|---------------------------|------------------|
|                           |                  | Domestic                          |                                    | Reex-<br>ports | Total<br>imports | Value                                | Per<br>cent-<br>age<br>of<br>total | Excess<br>of<br>agricul-<br>tural<br>exports | Exports          |                  |                  |                           |                  |
|                           |                  | Value                             | Per<br>cent-<br>age<br>of<br>total |                |                  |                                      |                                    |  | Do-<br>mestic    | Reex-<br>ports   | Im-<br>ports     | Excess<br>of im-<br>ports |                  |
|                           |                  |                                   |                                    |                |                  |                                      |                                    |  |                  |                  |                  |                           |                  |
|                           |                  | 1,000<br>dollars                  | 1,000<br>dollars                   | Per-<br>cent   | 1,000<br>dollars | 1,000<br>dollars                     | 1,000<br>dollars                   | Per-<br>cent                                 | 1,000<br>dollars | 1,000<br>dollars | 1,000<br>dollars | 1,000<br>dollars          | 1,000<br>dollars |
| 1909-10                   | 1,710,084        | 871,158                           | 50.9                               | 22,162         | 1,556,947        | 794,370                              | 51.0                               | 98,950                                       | 85,030           | 2,110            | 75,010           | 12,130                    |                  |
| 1910-11                   | 2,013,549        | 1,030,794                         | 51.2                               | 20,573         | 1,527,226        | 773,116                              | 50.6                               | 278,251                                      | 103,039          | 1,679            | 71,736           | 32,982                    |                  |
| 1911-12                   | 2,170,320        | 1,050,627                         | 48.4                               | 17,171         | 1,653,265        | 888,495                              | 53.7                               | 179,303                                      | 108,122          | 1,350            | 69,581           | 39,891                    |                  |
| 1912-13                   | 2,428,006        | 1,123,652                         | 46.3                               | 19,652         | 1,813,008        | 916,634                              | 50.6                               | 226,670                                      | 124,836          | 2,809            | 82,878           | 44,767                    |                  |
| 1913-14                   | 2,329,684        | 1,113,974                         | 47.8                               | 20,286         | 1,893,926        | 1,000,409                            | 52.8                               | 133,851                                      | 106,979          | 1,961            | 81,162           | 27,778                    |                  |
| 1914-15                   | 2,716,178        | 1,475,938                         | 54.3                               | 38,222         | 1,674,170        | 997,911                              | 59.6                               | 516,249                                      | 52,554           | 1,287            | 79,451           | 25,610                    |                  |
| 1915-16                   | 4,272,178        | 1,518,071                         | 35.5                               | 45,017         | 2,197,884        | 1,349,563                            | 61.4                               | 213,525                                      | 68,155           | 1,435            | 94,265           | 24,075                    |                  |
| 1916-17                   | 6,227,164        | 1,968,253                         | 31.6                               | 45,420         | 2,659,355        | 1,599,680                            | 60.2                               | 414,013                                      | 68,919           | 3,392            | 129,580          | 57,269                    |                  |
| 1917-18                   | 5,838,652        | 2,280,466                         | 39.1                               | 44,210         | 2,945,655        | 1,826,436                            | 62.0                               | 498,240                                      | 87,181           | 1,409            | 128,490          | 39,900                    |                  |
| 1918-19                   | 7,081,462        | 3,779,918                         | 50.6                               | 105,587        | 3,095,720        | 1,930,028                            | 62.3                               | 1,755,477                                    | 113,275          | 3,758            | 132,588          | 15,555                    |                  |
| 1919-20                   | 7,949,309        | 3,861,511                         | 48.3                               | 128,191        | 5,238,362        | 3,410,018                            | 65.1                               | 579,684                                      | 190,049          | 5,380            | 229,091          | 73,262                    |                  |
| 1920-21                   | 6,385,884        | 2,607,641                         | 40.8                               | 90,739         | 3,654,459        | 2,060,237                            | 56.4                               | 638,143                                      | 141,876          | 4,043            | 225,162          | 79,643                    |                  |
| 1921-22                   | 3,699,909        | 1,915,866                         | 51.8                               | 43,589         | 2,008,079        | 1,371,720                            | 52.6                               | 687,735                                      | 94,115           | 2,315            | 156,543          | 60,613                    |                  |
| 1922-23                   | 3,886,682        | 1,799,168                         | 46.3                               | 48,393         | 3,780,959        | 2,077,240                            | 54.9                               | 3,229,679                                    | 129,981          | 1,955            | 234,598          | 102,662                   |                  |
| 1923-24                   | 4,223,973        | 1,867,098                         | 44.2                               | 62,719         | 3,554,037        | 1,875,365                            | 52.8                               | 54,452                                       | 162,374          | 1,563            | 216,712          | 52,775                    |                  |
| 1924-25                   | 4,778,155        | 2,280,381                         | 47.7                               | 64,168         | 3,824,128        | 2,067,163                            | 53.8                               | 287,386                                      | 156,187          | 1,280            | 227,423          | 69,946                    |                  |
| 1925-26                   | 4,633,148        | 1,891,739                         | 40.7                               | 75,162         | 4,454,872        | 2,529,775                            | 56.7                               | 3,562,874                                    | 162,731          | 1,450            | 238,545          | 74,364                    |                  |
| 1926-27                   | 4,867,346        | 1,907,804                         | 39.2                               | 72,224         | 4,252,024        | 2,314,421                            | 53.7                               | 3,801,335                                    | 171,970          | 1,365            | 238,247          | 64,912                    |                  |
| 1927-28                   | 4,773,332        | 1,815,451                         | 38.0                               | 73,391         | 4,147,499        | 2,193,868                            | 52.9                               | 3,305,026                                    | 174,599          | 1,528            | 215,874          | 39,740                    |                  |
| 1928-29                   | 5,283,938        | 1,947,216                         | 35.0                               | 63,942         | 4,291,838        | 2,179,046                            | 50.8                               | 3,267,883                                    | 173,092          | 2,157            | 222,249          | 42,007                    |                  |
| 1929-30                   | 4,617,730        | 1,495,907                         | 32.4                               | 50,670         | 3,848,971        | 1,850,508                            | 49.1                               | 3,343,931                                    | 161,745          | 1,382            | 209,418          | 46,037                    |                  |
| 1930-31                   | 3,031,557        | 1,038,034                         | 34.2                               | 28,791         | 2,432,074        | 1,163,054                            | 47.8                               | 3,96,229                                     | 97,695           | 838              | 142,590          | 44,293                    |                  |
| 1931-32                   | 1,908,087        | 752,145                           | 39.4                               | 22,692         | 1,730,270        | 834,238                              | 48.2                               | 59,401                                       | 62,270           | 409              | 104,543          | 81,664                    |                  |
| 1932-33                   | 1,413,397        | 589,653                           | 41.7                               | 14,763         | 1,167,876        | 611,688                              | 52.4                               | 3,727  | 46,634           | 297              | 65,543           | 13,812                    |                  |
| 1933-34                   | 2,008,447        | 787,259                           | 39.2                               | 21,227         | 1,673,415        | 861,762                              | 51.5                               | 3,58,276                                     | 72,915           | 401              | 100,149          | 35,833                    |                  |

<sup>1</sup>Does not include forest products, but includes rubber now mostly a plantation product.

<sup>2</sup>Excess of exports.

<sup>3</sup>Excess of agricultural imports.

<sup>4</sup>Preliminary.

<sup>5</sup>Imports for consumption, 1933-34.

Bureau of Agricultural Economics.

This table supersedes table 500 in the Yearbook of Agriculture, 1931; the value of total imports and exports has been given and the imports of rubber, unmanufactured, and similar gums have been deducted from the imports of forest products and added to imports of agricultural products, also reexports of rubber, unmanufactured, and similar gums have been deducted from reexports of forest products and added to reexports of agricultural products. Rubber, unmanufactured, and similar gums, includes: Balata, gualupe, gutta-joolatong or jelutong or pontianak, gutta-percha, India rubber, crude, and India rubber scrap or refuse, fit only for remanufacture.

In the statistics of foreign commerce of the United States the Philippine Islands are treated as a foreign country. The statistics of foreign commerce include the trade of the customs districts of Alaska, Hawaii, and Puerto Rico with foreign countries, but do not include the trade of these Territories with the United States.

TABLE 443.—*Agricultural products: Value of trade between continental United States and noncontiguous Territories, 1924-25 to 1933-34*

| Year beginning July        | Puerto Rico                 |                             | Hawaii                      |                             | Alaska                      |                             |
|----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
|                            | United States ship-ments to | Ship-ments to United States | United States ship-ments to | Ship-ments to United States | United States ship-ments to | Ship-ments to United States |
|                            | 1,000 dollars               | 1,000 dollars               | 1,000 dollars               | 1,000 dollars               | 1,000 dollars               | 1,000 dollars               |
| 1924-25.....               | 29,710                      | 70,190                      | 17,954                      | 97,430                      | 9,774                       | 415                         |
| 1925-26.....               | 32,212                      | 70,385                      | 17,806                      | 105,470                     | 9,539                       | 516                         |
| 1926-27.....               | 32,603                      | 84,061                      | 18,019                      | 98,600                      | 8,737                       | 720                         |
| 1927-28.....               | 28,146                      | 82,326                      | 19,004                      | 110,338                     | 9,435                       | 281                         |
| 1928-29.....               | 31,466                      | 53,333                      | 19,343                      | 103,653                     | 9,108                       | 290                         |
| 1929-30.....               | 23,117                      | 75,868                      | 19,888                      | 98,097                      | 9,257                       | 511                         |
| 1930-31.....               | 25,062                      | 75,390                      | 17,759                      | 103,119                     | 6,982                       | 380                         |
| 1931-32.....               | 18,796                      | 67,769                      | 15,795                      | 92,460                      | 5,443                       | 147                         |
| 1932-33.....               | 17,469                      | 58,992                      | 12,517                      | 79,993                      | 4,920                       | 65                          |
| 1933-34 <sup>1</sup> ..... | 20,393                      | 66,092                      | 16,643                      | 87,069                      | 6,185                       | 131                         |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1924-34.

TABLE 444.—*Agricultural products: Value of principal groups exported from and imported into the United States, 1931-32 to 1933-34*

| Article                                  | Domestic exports |               |                      | General imports |               |                      |
|--|------------------|---------------|----------------------|-----------------|---------------|----------------------|
|  | 1931-32          | 1932-33       | 1933-34 <sup>1</sup> | 1931-32         | 1932-33       | 1933-34 <sup>1</sup> |
|  | 1,000 dollars    | 1,000 dollars | 1,000 dollars        | 1,000 dollars   | 1,000 dollars | 1,000 dollars        |
| <b>ANIMALS AND ANIMAL PRODUCTS</b>       |                  |               |                      |                 |               |                      |
| Animals, live.....                       | 1,090            | 970           | 1,370                | 4,275           | 2,299         | 2,312                |
| Dairy products.....                      | 8,721            | 4,291         | 4,365                | 14,293          | 12,582        | 11,435               |
| Eggs and egg products.....               | 827              | 404           | 443                  | 1,158           | 815           | 371                  |
| Hides and skins, raw (except fur).....   | 2,230            | 1,900         | 2,477                | 37,412          | 22,984        | 54,159               |
| Meat and meat products.....              | 66,811           | 53,376        | 64,335               | 5,775           | 3,937         | 4,321                |
| Silk, unmanufactured.....                |                  |               |                      | 158,479         | 96,483        | 102,217              |
| Wool and mohair, unmanufactured.....     | 34               | 35            | 29                   | 12,706          | 4,521         | 24,139               |
| Animal products, miscellaneous.....      | 5,837            | 5,580         | 10,753               | 15,211          | 9,698         | 20,054               |
| Total.....                               | 85,550           | 66,556        | 83,772               | 249,309         | 153,319       | 219,008              |
| <b>VEGETABLE PRODUCTS</b>                |                  |               |                      |                 |               |                      |
| Chocolate and cocoa.....                 | 322              | 229           | 285                  | 20,412          | 18,381        | 20,222               |
| Coffee.....                              | 1,607            | 1,309         | 2,410                | 149,110         | 128,548       | 127,452              |
| Cotton lint, unmanufactured.....         | 337,595          | 321,960       | 438,018              | 6,435           | 5,869         | 9,272                |
| Linters.....                             | 1,694            | 2,327         | 4,269                |                 |               |                      |
| Total cotton, unmanufactured.....        | 339,289          | 324,287       | 442,277              | 6,435           | 5,869         | 9,272                |
| Fruits.....                              | 91,684           | 65,933        | 78,133               | 37,825          | 30,492        | 31,196               |
| Grains and grain products.....           | 106,406          | 40,026        | 40,223               | 12,219          | 7,439         | 21,169               |
| Nuts.....                                | 1,028            | 736           | 2,667                | 13,491          | 7,876         | 9,893                |
| Oilseeds and oilseed products.....       | 17,780           | 12,762        | 14,774               | 66,924          | 45,873        | 73,722               |
| Rubber and similar gums.....             |                  |               |                      | 51,925          | 26,949        | 87,809               |
| Seeds, except oilseeds.....              | 1,839            | 1,184         | 2,109                | 3,772           | 2,688         | 3,828                |
| Spices.....                              | 133              | 106           | 1,152                | 8,903           | 7,061         | 10,325               |
| Sugar, molasses, and sirups.....         | 2,328            | 1,403         | 2,416                | 115,576         | 106,783       | 123,717              |
| Tee.....                                 |                  |               |                      | 15,767          | 10,670        | 16,749               |
| Tobacco, unmanufactured.....             | 86,281           | 62,823        | 99,878               | 32,544          | 21,004        | 24,858               |
| Vegetables and preparations.....         | 8,725            | 6,282         | 7,920                | 18,948          | 12,551        | 16,616               |
| Vegetable products, miscellaneous.....   | 9,173            | 6,017         |                      | 31,178          | 26,775        | 66,206               |
| Total vegetable products.....            | 666,595          | 523,097       | 703,487              | 584,929         | 453,369       | 642,752              |
| Total animal and vegetable products..... | 752,145          | 589,653       | 787,259              | 834,238         | 611,688       | 861,762              |
| <b>FOREST PRODUCTS</b>                   |                  |               |                      |                 |               |                      |
| Dyeing and tanning materials.....        | 1,536            | 1,382         | 1,979                | 4,685           | 2,544         | 6,993                |
| Gums, resins, and balsams.....           | 13,415           | 11,949        | 15,781               | 10,770          | 5,339         | 9,186                |
| Wood.....                                | 42,247           | 29,500        | 47,710               | 31,699          | 15,484        | 24,510               |
| Forest products, miscellaneous.....      | 5,073            | 2,303         | 7,445                | 57,388          | 42,176        | 68,460               |
| Total.....                               | 62,270           | 46,634        | 72,915               | 104,542         | 65,543        | 109,149              |
| Total agricultural products.....         | 814,415          | 634,287       | 860,174              | 938,780         | 677,231       | 970,911              |

<sup>1</sup> Preliminary.<sup>2</sup> Imports for consumption.

Bureau of Agricultural Economics; compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1933 and 1934.

In the statistics of foreign commerce of the United States, the Philippine Islands are treated as a foreign country. The statistics of foreign commerce include the trade of the customs districts of Alaska, Hawaii, and Puerto Rico with foreign countries, but do not include the trade of these Territories with the United States.

TABLE 445.—*Index numbers of quantities of principal agricultural exports, United States 1909-10 to 1933-34*

[1909-10 to 1913-14=100]

| Year beginning July | 44 com-<br>modities | 44 com-<br>modities<br>except<br>cotton | Cotton<br>fiber | Grains<br>and grain<br>products | Cattle<br>and meat<br>products | Dairy<br>products | Fruits | Tobacco |
|---------------------|---------------------|---|-----------------|---------------------------------|--------------------------------|-------------------|--------|---------|
| 1909-10.....        | 78                  | 86                                      | 73              | 82                              | 91                             | 58                | 76     | 91      |
| 1910-11.....        | 92                  | 92                                      | 91              | 85                              | 104                            | 93                | 89     | 90      |
| 1911-12.....        | 114                 | 100                                     | 125             | 78                              | 115                            | 126               | 101    | 97      |
| 1912-13.....        | 110                 | 119                                     | 103             | 143                             | 97                             | 120               | 136    | 107     |
| 1913-14.....        | 106                 | 103                                     | 108             | 112                             | 92                             | 103               | 98     | 114     |
| 1914-15.....        | 138                 | 189                                     | 99              | 301                             | 126                            | 302               | 119    | 89      |
| 1915-16.....        | 118                 | 184                                     | 70              | 237                             | 164                            | 479               | 109    | 113     |
| 1916-17.....        | 118                 | 182                                     | 70              | 217                             | 164                            | 716               | 101    | 105     |
| 1917-18.....        | 101                 | 165                                     | 53              | 179                             | 197                            | 975               | 63     | 74      |
| 1918-19.....        | 145                 | 255                                     | 68              | 272                             | 287                            | 1,287             | 111    | 160     |
| 1919-20.....        | 134                 | 207                                     | 80              | 218                             | 185                            | 1,275             | 122    | 165     |
| 1920-21.....        | 137                 | 212                                     | 64              | 329                             | 154                            | 524               | 108    | 129     |
| 1921-22.....        | 127                 | 213                                     | 76              | 317                             | 153                            | 571               | 105    | 116     |
| 1922-23.....        | 112                 | 182                                     | 59              | 246                             | 169                            | 405               | 121    | 116     |
| 1923-24.....        | 104                 | 153                                     | 67              | 143                             | 179                            | 451               | 214    | 152     |
| 1924-25.....        | 126                 | 167                                     | 95              | 225                             | 140                            | 396               | 184    | 110     |
| 1925-26.....        | 106                 | 123                                     | 93              | 117                             | 114                            | 327               | 211    | 187     |
| 1926-27.....        | 136                 | 143                                     | 131             | 188                             | 98                             | 288               | 301    | 182     |
| 1927-28.....        | 112                 | 138                                     | 92              | 188                             | 98                             | 263               | 258    | 125     |
| 1928-29.....        | 117                 | 141                                     | 99              | 174                             | 102                            | 243               | 372    | 144     |
| 1929-30.....        | 97                  | 117                                     | 82              | 130                             | 104                            | 221               | 216    | 153     |
| 1930-31.....        | 90                  | 101                                     | 81              | 104                             | 74                             | 190               | 337    | 150     |
| 1931-32.....        | 98                  | 91                                      | 103             | 104                             | 63                             | 123               | 305    | 110     |
| 1932-33.....        | 85                  | 64                                      | 100             | 42                              | 63                             | 74                | 255    | 102     |
| 1933-34.....        | 83                  | 65                                      | 97              | 34                              | 65                             | 72                | 248    | 120     |

Bureau of Agricultural Economics. Computations are based on the gross exports of 44 of the most important farm products. The index numbers were calculated as follows: Quantities of various commodities exported each year were multiplied by the average yearly export prices of these commodities from July 1909 to June 1914. The sum of the values determined in this way was then divided by the average yearly value of exports from 1909-10 to 1913-14 to obtain the index.

TABLE 446.—*Exports and imports of selected forest products, 1909-10 to 1933-34*

| Year beginning<br>July     | Domestic exports                   |                |                  |                                    |                       | Imports                |   |               |                 |                   |
|----------------------------|------------------------------------|----------------|------------------|------------------------------------|-----------------------|------------------------|---|---------------|-----------------|-------------------|
|                            | Lumber                             |                | Rosin            | Spirits<br>or tur-<br>pen-<br>tine | Tim-<br>ber,<br>sawed | Cam-<br>phor,<br>crude | Lumber  |               | Shellac         | Wood<br>pulp      |
|                            | Boards,<br>deals,<br>and<br>planks | Staves         |                  |                                    |                       |                        | Boards,<br>deals,<br>planks,<br>and<br>other<br>sawed | Shin-<br>gles |                 |                   |
|                            | 1,000<br>M feet                    | Thou-<br>sands | 1,000<br>barrels | 1,000<br>gallons                   | 1,000<br>M feet       | 1,000<br>pounds        | 1,000<br>M feet                                       | 1,000<br>M    | 1,000<br>pounds | 1,000<br>longtons |
| 1909-10.....               | 1,684                              | 49,784         | 2,144            | 15,588                             | 491                   | 3,007                  | 1,054   | 763           | 29,402          | 378               |
| 1910-11.....               | 2,032                              | 65,726         | 2,190            | 14,818                             | 532                   | 3,726                  | 872   | 643           | 15,495          | 492               |
| 1911-12.....               | 2,307                              | 64,163         | 2,474            | 19,599                             | 438                   | 2,155                  | 905   | 515           | 18,746          | 478               |
| 1912-13.....               | 2,550                              | 89,006         | 2,806            | 21,094                             | 512                   | 3,709                  | 1,091   | 560           | 21,912          | 502               |
| 1913-14.....               | 2,405                              | 77,151         | 2,418            | 18,901                             | 441                   | 3,477                  | 929   | 895           | 16,720          | 508               |
| 1914-15.....               | 1,129                              | 39,297         | 1,372            | 9,494                              | 174                   | 3,729                  | 939   | 1,487         | 24,153          | 588               |
| 1915-16.....               | 1,177                              | 57,538         | 1,571            | 9,810                              | 201                   | 4,574                  | 1,218   | 1,769         | 25,818          | 507               |
| 1916-17.....               | 1,042                              | 61,469         | 1,639            | 8,842                              | 184                   | 6,885                  | 1,175   | 1,924         | 32,540          | 699               |
| 1917-18.....               | 1,068                              | 68,207         | 1,071            | 5,095                              | 106                   | 3,698                  | 1,233   | 1,876         | 22,913          | 504               |
| 1918-19.....               | 1,073                              | 62,753         | 832              | 5,065                              | 92                    | 2,823                  | 977   | 1,757         | 14,269          | 475               |
| 1919-20.....               | 1,518                              | 80,791         | 1,222            | 7,461                              | 232                   | 4,026                  | 1,492   | 2,152         | 34,151          | 727               |
| 1920-21.....               | 1,269                              | 65,710         | 877              | 9,742                              | 123                   | 2,093                  | 620   | 1,831         | 23,872          | 624               |
| 1921-22.....               | 1,543                              | 55,162         | 786              | 10,786                             | 268                   | 1,592                  | 1,124   | 2,190         | 30,768          | 902               |
| 1922-23.....               | 1,549                              | 57,466         | 1,040            | 9,012                              | 383                   | 3,498                  | 1,958   | 2,695         | 32,773          | 1,263             |
| 1923-24.....               | 1,867                              | 60,868         | 1,205            | 11,194                             | 815                   | 1,955                  | 1,780   | 2,417         | 28,512          | 1,188             |
| 1924-25.....               | 1,929                              | 79,922         | 1,412            | 12,308                             | 586                   | 1,904                  | 1,732   | 2,551         | 21,436          | 1,529             |
| 1925-26.....               | 1,985                              | 75,554         | 1,073            | 10,254                             | 652                   | 2,616                  | 1,869   | 2,482         | 26,188          | 1,469             |
| 1926-27.....               | 2,013                              | 74,826         | 1,229            | 13,820                             | 707                   | 2,175                  | 1,841   | 2,275         | 28,707          | 1,509             |
| 1927-28.....               | 2,318                              | 78,466         | 1,300            | 14,332                             | 825                   | 2,704                  | 1,529   | 2,034         | 23,012          | 1,521             |
| 1928-29.....               | 2,387                              | 82,409         | 1,309            | 14,175                             | 711                   | 5,064                  | 1,441   | 2,052         | 31,548          | 1,643             |
| 1929-30.....               | 2,100                              | 78,624         | 1,366            | 15,722                             | 657                   | 1,777                  | 1,461   | 1,387         | 26,444          | 1,722             |
| 1930-31.....               | 1,466                              | 47,207         | 1,099            | 13,282                             | 405                   | 1,246                  | 915   | 1,058         | 14,145          | 1,456             |
| 1931-32.....               | 1,012                              | 34,982         | 1,156            | 13,820                             | 319                   | 2,387                  | 627   | 1,081         | 13,006          | 1,469             |
| 1932-33.....               | 842                                | 27,852         | 1,125            | 11,281                             | 320                   | 1,540                  | 206   | 1,378         | 8,102           | 1,287             |
| 1933-34 <sup>1</sup> ..... | 968                                | 33,035         | 1,137            | 12,720                             | 266                   | 2,528                  | 361   | 1,422         | 12,147          | 1,884             |

<sup>1</sup> Preliminary.

Bureau of Agricultural Economics; compiled from Foreign Commerce and Navigation of the United States, 1909-18, and Monthly Summary of Foreign Commerce of the United States, June issues, 1919-34.

TABLE 447.—Exports of selected domestic agricultural products, annual 1909-10 to 1933-34

| Year beginning July | Butter       | Cheese       | Milk, condensed and evaporated | Eggs in the shell | Pork and its products, total <sup>1</sup> | Pork, fresh  | Pork, pickled | Bacon, including Cumberland sides | Hams and shoulders, including Wiltshire sides | Lard, pure   |
|---------------------|--------------|--------------|--------------------------------|-------------------|---|--------------|---------------|-----------------------------------|---|--------------|
|                     | 1,000 pounds | 1,000 pounds | 1,000 pounds                   | 1,000 dozen       | 1,000 pounds                              | 1,000 pounds | 1,000 pounds  | 1,000 pounds                      | 1,000 pounds                                  | 1,000 pounds |
| 1909-10.....        | 3,141        | 2,847        | 13,311                         | 5,326             | 707,110                                   | 1,040        | 40,032        | 152,163                           | 146,885                                       | 362,928      |
| 1910-11.....        | 4,875        | 10,367       | 12,180                         | 8,559             | 879,455                                   | 1,355        | 45,729        | 156,675                           | 57,709  | 476,108      |
| 1911-12.....        | 6,092        | 6,858        | 20,643                         | 15,406            | 1,071,852                                 | 2,598        | 56,321        | 208,574                           | 204,044                                       | 532,256      |
| 1912-13.....        | 3,586        | 2,569        | 16,526                         | 10,409            | 984,697                                   | 2,458        | 53,749        | 203,994                           | 159,545                                       | 519,025      |
| 1913-14.....        | 3,694        | 2,428        | 16,209                         | 10,149            | 921,613                                   | 2,668        | 45,543        | 193,964                           | 165,882                                       | 481,458      |
| 1914-15.....        | 9,851        | 55,363       | 37,236                         | 20,784            | 1,106,180                                 | 3,308        | 45,656        | 346,718                           | 268,701                                       | 475,632      |
| 1915-16.....        | 13,487       | 44,394       | 159,573                        | 26,396            | 1,462,697                                 | 63,006       | 63,461        | 579,809                           | 282,209                                       | 427,011      |
| 1916-17.....        | 20,535       | 66,050       | 259,141                        | 24,626            | 1,501,948                                 | 50,436       | 46,993        | 667,152                           | 266,657                                       | 444,770      |
| 1917-18.....        | 17,736       | 44,303       | 528,759                        | 18,969            | 1,692,124                                 | 21,390       | 33,222        | 815,294                           | 419,572                                       | 392,506      |
| 1918-19.....        | 33,740       | 18,792       | 728,741                        | 28,385            | 2,704,694                                 | 19,644       | 31,504        | 1,238,247                         | 667,240                                       | 724,771      |
| 1919-20.....        | 27,156       | 19,378       | 705,468                        | 35,327            | 1,762,611                                 | 27,225       | 41,643        | 508,667                           | 275,456                                       | 587,225      |
| 1920-21.....        | 7,829        | 10,826       | 262,665                        | 26,960            | 1,522,162                                 | 57,075       | 33,286        | 489,268                           | 172,012                                       | 746,157      |
| 1921-22.....        | 7,612        | 7,471        | 277,811                        | 33,762            | 1,516,820                                 | 55,911       | 33,510        | 350,549                           | 271,642                                       | 812,379      |
| 1922-23.....        | 9,410        | 8,446        | 157,038                        | 34,284            | 1,784,880                                 | 43,772       | 40,984        | 408,334                           | 319,269                                       | 952,642      |
| 1923-24.....        | 5,425        | 3,988        | 213,547                        | 32,832            | 1,634,189                                 | 49,113       | 37,469        | 428,500                           | 381,564                                       | 1,014,898    |
| 1924-25.....        | 5,384        | 9,432        | 173,547                        | 25,107            | 1,400,149                                 | 27,603       | 26,726        | 236,263                           | 292,214                                       | 792,735      |
| 1925-26.....        | 5,280        | 4,094        | 135,865                        | 27,031            | 1,172,635                                 | 15,867       | 29,126        | 189,153                           | 220,014                                       | 695,445      |
| 1926-27.....        | 5,648        | 3,773        | 108,942                        | 27,962            | 1,012,668                                 | 10,881       | 27,962        | 127,576                           | 143,640                                       | 675,812      |
| 1927-28.....        | 3,965        | 2,573        | 108,942                        | 27,832            | 1,046,906                                 | 11,059       | 31,650        | 128,977                           | 127,819                                       | 716,398      |
| 1928-29.....        | 3,773        | 2,572        | 112,492                        | 15,982            | 1,112,394                                 | 10,641       | 39,906        | 129,248                           | 125,396                                       | 786,914      |
| 1929-30.....        | 3,532        | 2,339        | 101,572                        | 14,234            | 1,138,588                                 | 18,768       | 39,809        | 132,667                           | 130,318                                       | 787,160      |
| 1930-31.....        | 2,293        | 1,733        | 78,986                         | 14,386            | 791,854                                   | 11,093       | 21,118        | 52,412                            | 99,749  | 585,670      |
| 1931-32.....        | 1,578        | 1,564        | 65,623                         | 3,510             | 679,748                                   | 8,270        | 15,229        | 25,676                            | 56,334  | 542,639      |
| 1932-33.....        | 1,386        | 1,346        | 40,013                         | 3,805             | 636,462                                   | 8,152        | 14,275        | 17,699                            | 71,213  | 560,299      |
| 1933-34.....        | 1,416        | 1,253        | 38,088                         | 2,008             | 705,982                                   | 28,299       | 19,070        | 23,841                            | 71,488  | 546,997      |

<sup>1</sup> Includes canned, fresh, salted, or pickled pork, lard, neutral lard, lard oil, bacon, and hams, Wiltshire and Cumberland sides.<sup>2</sup> Includes "Wiltshire sides," beginning January 1932.<sup>3</sup> Wiltshire sides included with "Bacon."<sup>4</sup> Preliminary.<sup>5</sup> Includes canned, cured, and fresh beef, oleo oil, oleo stock, oleomargarine, tallow, and stearin from animal fats.<sup>6</sup> Bales of 500 pounds gross; lint cotton and linters not separately reported prior to 1915.

TABLE 447.—Exports of selected domestic agricultural products, annual 1909-10 to 1933-34—Continued

| Year beginning July        | Oranges <sup>7</sup> | Apples, canned <sup>8</sup> | Pears, canned <sup>8</sup> | Peaches, canned <sup>8</sup> | Pine-apples, canned <sup>8</sup> | Grapes       | Pears, fresh <sup>8</sup> | Grapefruit, fresh | Starch, including corn-starch | Corn-starch <sup>9</sup> |
|----------------------------|----------------------|-----------------------------|----------------------------|------------------------------|----------------------------------|--------------|---------------------------|-------------------|-------------------------------|--------------------------|
|                            | 1,000 boxes          | 1,000 pounds                | 1,000 pounds               | 1,000 pounds                 | 1,000 pounds                     | 1,000 pounds | 1,000 pounds              | 1,000 boxes       | 1,000 pounds                  | 1,000 pounds             |
| 1909-10.....               | 1,932                |                             |                            |                              |                                  |              |                           |                   | 61,536                        |                          |
| 1910-11.....               | 1,179                |                             |                            |                              |                                  |              |                           |                   | 158,239                       |                          |
| 1911-12.....               | 1,197                |                             |                            |                              |                                  |              |                           |                   | 83,045                        |                          |
| 1912-13.....               | 1,063                |                             |                            |                              |                                  |              |                           |                   | 110,898                       |                          |
| 1913-14.....               | 1,559                |                             |                            |                              |                                  |              |                           |                   | 76,714                        |                          |
| 1914-15.....               | 1,759                |                             |                            |                              |                                  |              |                           |                   | 210,185                       |                          |
| 1915-16.....               | 1,575                |                             |                            |                              |                                  |              |                           |                   | 146,424                       |                          |
| 1916-17.....               | 1,850                |                             |                            |                              |                                  |              |                           |                   | 73,883                        | 38,659                   |
| 1917-18.....               | 1,240                |                             |                            |                              |                                  |              |                           |                   | 143,788                       | 105,727                  |
| 1918-19.....               | 1,402                |                             |                            |                              |                                  |              |                           |                   | 237,609                       | 163,315                  |
| 1919-20.....               | 1,619                |                             |                            |                              |                                  |              |                           |                   | 135,365                       | 110,514                  |
| 1920-21.....               | 2,001                |                             |                            |                              |                                  |              |                           |                   | 386,873                       | 348,940                  |
| 1921-22.....               | 1,641                |                             |                            |                              |                                  | 10 173       |                           | 1,140             | 260,796                       | 254,080                  |
| 1922-23.....               | 1,799                | 10 13,809                   | 49,358                     | 54,624                       | 21,848                           | 14,022       | 36,785                    | 252               | 262,842                       | 255,135                  |
| 1923-24.....               | 2,592                | 26,576                      | 38,431                     | 50,374                       | 25,238                           | 20,257       | 50,237                    | 305               | 214,247                       | 209,463                  |
| 1924-25.....               | 2,197                | 31,860                      | 53,851                     | 57,390                       | 26,252                           | 20,302       | 41,452                    | 427               | 234,569                       | 208,463                  |
| 1925-26.....               | 2,253                | 29,547                      | 75,876                     | 83,160                       | 37,543                           | 24,268       | 71,205                    | 379               | 213,111                       | 212,375                  |
| 1926-27.....               | 3,340                | 35,896                      | 66,104                     | 81,896                       | 37,426                           | 30,791       | 83,877                    | 613               | 231,688                       | 275,921                  |
| 1927-28.....               | 2,988                | 29,013                      | 52,671                     | 86,634                       | 51,227                           | 38,819       | 51,056                    | 719               | 235,660                       | 231,667                  |
| 1928-29.....               | 4,223                | 26,249                      | 82,652                     | 101,438                      | 47,533                           | 55,638       | 82,847                    | 940               | 203,343                       | 200,588                  |
| 1929-30.....               | 3,674                | 33,325                      | 54,709                     | 74,470                       | 46,809                           | 46,168       | 62,024                    | 854               | 104,807                       | 102,886                  |
| 1930-31.....               | 3,984                | 19,024                      | 74,855                     | 75,763                       | 35,308                           | 49,799       | 134,670                   | 1,222             | 73,071                        | 71,927                   |
| 1931-32.....               | 3,534                | 23,161                      | 71,570                     | 66,300                       | 20,920                           | 27,613       | 90,702                    | 1,202             | 52,950                        | 52,950                   |
| 1932-33.....               | 3,391                | 19,504                      | 60,762                     | 74,999                       | 15,923                           | 24,352       | 119,987                   | 802               | 73,922                        | 73,927                   |
| 1933-34 <sup>4</sup> ..... | 3,449                | 24,315                      | 78,394                     | 81,464                       | 21,831                           | 26,689       | 111,008                   | 946               |                               |                          |

| Year beginning July        | Barley, including flour and malt <sup>11</sup> | Corn, including corn meal | Oats, including oat-meal | Rice, including flour, meal, and broken rice | Rye, including flour | Wheat, including flour | Tobacco, unmanufactured <sup>12</sup> | Glucose and grape sugar | Hops         | Sugar, raw and refined <sup>13</sup> |
|----------------------------|--|---------------------------|--------------------------|--|----------------------|------------------------|---------------------------------------|-------------------------|--------------|--------------------------------------|
|                            | 1,000 bushels                                  | 1,000 bushels             | 1,000 bushels            | 1,000 pounds                                 | 1,000 bushels        | 1,000 bushels          | 1,000 pounds                          | 1,000 pounds            | 1,000 pounds | 1,000 sh. tons                       |
| 1909-10.....               | 4,454  | 33,128                    | 2,549                    | 7,050  | 242                  | 89,173                 | 357,196                               | 149,820                 | 10,589       | 63                                   |
| 1910-11.....               | 9,507  | 65,615                    | 3,846                    | 15,675                                       | 40                   | 71,338                 | 355,327                               | 181,993                 | 13,105       | 28                                   |
| 1911-12.....               | 1,655  | 41,797                    | 2,678                    | 20,798                                       | 81                   | 81,891                 | 379,845                               | 171,156                 | 12,191       | 40                                   |
| 1912-13.....               | 17,874   | 50,780                    | 36,455                   | 24,801                                       | 1,855                | 145,153                | 418,797                               | 200,156                 | 17,891       | 22                                   |
| 1913-14.....               | 6,945  | 10,726                    | 2,749                    | 15,223                                       | 2,279                | 147,965                | 449,750                               | 199,531                 | 24,263       | 26                                   |
| 1914-15.....               | 28,712   | 50,668                    | 100,609                  | 75,449                                       | 13,027               | 335,702                | 348,846                               | 158,463                 | 16,210       | 275                                  |
| 1915-16.....               | 30,821   | 39,897                    | 98,960                   | 120,695                                      | 15,250               | 246,221                | 443,293                               | 186,406                 | 22,410       | 815                                  |
| 1916-17.....               | 20,319   | 66,753                    | 95,106                   | 181,372                                      | 13,703               | 205,962                | 411,699                               | 214,973                 | 4,825        | 629                                  |
| 1917-18.....               | 23,717   | 49,073                    | 125,091                  | 196,363                                      | 17,186               | 132,579                | 289,171                               | 97,858                  | 3,495        | 288                                  |
| 1918-19.....               | 26,997   | 23,019                    | 109,005                  | 193,128                                      | 36,467               | 287,402                | 629,288                               | 136,230                 | 7,467        | 553                                  |
| 1919-20.....               | 34,555   | 16,729                    | 43,436                   | 483,385                                      | 41,531               | 222,030                | 648,038                               | 245,264                 | 30,780       | 722                                  |
| 1920-21.....               | 27,255   | 70,906                    | 9,391                    | 440,855                                      | 47,337               | 369,313                | 506,526                               | 141,954                 | 22,206       | 292                                  |
| 1921-22.....               | 27,543   | 179,490                   | 21,237                   | 541,509                                      | 29,944               | 282,566                | 463,389                               | 273,982                 | 19,522       | 1,001                                |
| 1922-23.....               | 21,909   | 96,596                    | 25,413                   | 370,870                                      | 51,663               | 224,900                | 454,364                               | 162,693                 | 13,497       | 375                                  |
| 1923-24.....               | 13,913   | 23,135                    | 8,796                    | 227,757                                      | 19,902               | 159,880                | 597,630                               | 148,051                 | 20,461       | 135                                  |
| 1924-25.....               | 28,543   | 9,791                     | 16,777                   | 112,037                                      | 50,242               | 260,803                | 430,702                               | 139,577                 | 16,122       | 251                                  |
| 1925-26.....               | 30,449   | 24,783                    | 39,687                   | 48,175                                       | 12,647               | 108,035                | 337,240                               | 170,142                 | 14,998       | 800                                  |
| 1926-27.....               | 19,655   | 18,819                    | 15,041                   | 304,358                                      | 21,697               | 219,160                | 516,401                               | 148,789                 | 13,269       | 114                                  |
| 1927-28.....               | 39,274   | 19,409                    | 9,823                    | 309,788                                      | 26,346               | 206,269                | 489,996                               | 145,951                 | 11,812       | 106                                  |
| 1928-29.....               | 60,295   | 41,874                    | 16,251                   | 392,654                                      | 9,488                | 163,867                | 585,925                               | 123,366                 | 8,836        | 128                                  |
| 1929-30.....               | 24,054   | 10,281                    | 7,966                    | 289,532                                      | 2,600                | 153,245                | 600,181                               | 101,816                 | 6,793        | 79                                   |
| 1930-31.....               | 11,443   | 3,317                     | 3,123                    | 281,005                                      | 227                  | 131,475                | 591,985                               | 70,571                  | 5,593        | 70                                   |
| 1931-32.....               | 5,489  | 3,969                     | 4,438                    | 274,716                                      | 909                  | 135,797                | 432,531                               | 51,855                  | 3,317        | 54                                   |
| 1932-33.....               | 9,599  | 8,775                     | 5,361                    | 177,715                                      | 311                  | 41,211                 | 399,987                               | 41,829                  | 2,431        | 41                                   |
| 1933-34 <sup>4</sup> ..... | 6,111  | 4,968                     | 1,405                    | 100,819                                      | 21                   | 37,001                 | 472,630                               | 51,662                  | 7,588        | 60                                   |

<sup>4</sup> Preliminary.<sup>7</sup> Converted to boxes of 78 pounds.<sup>8</sup> Given in value only prior to 1922-23.<sup>9</sup> Included with "Starch" prior to 1917-18.<sup>10</sup> Jan. 1 to June 30.<sup>11</sup> Includes barley flour 1919-22. Barley flour not separately reported prior to 1919 nor since 1922.<sup>12</sup> Includes "Stems, trimmings, and scrap tobacco."<sup>13</sup> Includes maple sugar, 1919-34.

Bureau of Agricultural Economics; compiled from Foreign Commerce and Navigation of the United States, 1909-18, and Monthly Summary of Foreign Commerce of the United States, June issues 1919-34. Conversion factors used: Corn meal, 1 barrel=4 bushels corn; oatmeal, 18 pounds=1 bushel oats; rye flour, 1 barrel=6 bushels rye; malt, 1.1 bushels=1 bushel barley; wheat flour, 1 barrel=1909-17, 4.7 bushels grain; 1918 and 1919, 4.6 bushels; 1920, 4.6 bushels; 1921-34, 4.7 bushels; apples, 3 boxes=1 barrel. The unit "1,000 pounds" in the columns of canned goods is presumed to be net weight, according to Government regulations.



TABLE 448.—Imports of selected agricultural products, annual 1909-10 to 1933-34

| Year beginning July        | Butter       | Cheese       | Milk, fresh <sup>1</sup> | Cream, fresh <sup>1</sup> | Beef and veal, fresh | Beef, corned <sup>2</sup> | Cattle hides, excluding calf and kip |                  | Goat-skins   | Total hides and skins (except furs) | Wool, unmanufactured, including mohair, etc. |
|----------------------------|--------------|--------------|--------------------------|---------------------------|----------------------|---------------------------|--------------------------------------|------------------|--------------|-------------------------------------|--|
|                            |              |              |                          |                           |                      |                           | Wet <sup>4</sup>                     | Dry <sup>5</sup> |              |                                     |  |
|                            | 1,000 pounds | 1,000 pounds | 1,000 gallons            | 1,000 gallons             | 1,000 pounds         | 1,000 pounds              | 1,000 pounds                         | 1,000 pounds     | 1,000 pounds | 1,000 pounds                        | 1,000 pounds                                 |
| 1909-10.....               | 1,360        | 40,818       | -----                    | 732                       | -----                | -----                     | 318,004                              | 115,845          | 608,619      | 263,928                             | 137,648                                      |
| 1910-11.....               | 1,008        | 45,569       | -----                    | 2,333                     | -----                | -----                     | 95,498                               | 54,630           | 86,914       | 374,891                             | 193,401                                      |
| 1911-12.....               | 1,026        | 46,542       | -----                    | 1,120                     | -----                | -----                     | 172,881                              | 78,131           | 95,341       | 537,768                             | 195,293                                      |
| 1912-13.....               | 1,162        | 49,888       | -----                    | 1,247                     | ( <sup>6</sup> )     | -----                     | 185,447                              | 82,595           | 96,250       | 572,197                             | 247,649                                      |
| 1913-14.....               | 7,842        | 63,784       | -----                    | 1,773                     | 180,137              | -----                     | 208,478                              | 71,485           | 84,759       | 561,071                             | 308,083                                      |
| 1914-15.....               | 3,828        | 50,139       | -----                    | 2,077                     | 184,491              | -----                     | 241,340                              | 93,001           | 66,547       | 538,218                             | 534,828                                      |
| 1915-16.....               | 713          | 30,088       | -----                    | 1,194                     | 71,102               | -----                     | 280,839                              | 153,339          | 100,657      | 743,670                             | 372,372                                      |
| 1916-17.....               | 524          | 14,482       | -----                    | 744                       | 15,217               | -----                     | 225,363                              | 161,237          | 105,640      | 700,207                             | 379,130                                      |
| 1917-18.....               | 1,806        | 9,839        | -----                    | 712                       | 25,452               | -----                     | 190,845                              | 76,655           | 66,933       | 432,517                             | 427,578                                      |
| 1918-19.....               | 4,131        | 2,442        | 2,592                    | ( <sup>6</sup> )          | 36,670               | 127,135                   | 220,695                              | 33,182           | 89,005       | 448,142                             | 422,415                                      |
| 1919-20.....               | 20,771       | 17,914       | 3,989                    | ( <sup>6</sup> )          | 42,436               | 1,434                     | 328,209                              | 111,262          | 126,996      | 798,569                             | 427,578                                      |
| 1920-21.....               | 34,344       | 16,585       | 4,391                    | ( <sup>6</sup> )          | 41,956               | 3,081                     | 73,759                               | 24,814           | 41,728       | 352,193                             | 313,238                                      |
| 1921-22.....               | 9,551        | 34,271       | 4,536                    | ( <sup>6</sup> )          | 28,001               | 169                       | 186,498                              | 18,488           | 83,535       | 392,904                             | 255,087                                      |
| 1922-23.....               | 15,772       | 54,555       | 5,148                    | ( <sup>6</sup> )          | 32,481               | 2,393                     | 346,613                              | 58,770           | 89,401       | 682,893                             | 525,473                                      |
| 1923-24.....               | 29,466       | 66,597       | 6,623                    | 71,646                    | 25,144               | 5,892                     | 158,363                              | 18,112           | 65,881       | 365,194                             | 239,122                                      |
| 1924-25.....               | 7,189        | 61,489       | 6,418                    | 4,765                     | 12,419               | 10,060                    | 184,934                              | 14,376           | 65,956       | 387,447                             | 284,706                                      |
| 1925-26.....               | 6,440        | 62,412       | 7,479                    | 4,798                     | 18,279               | 14,973                    | 141,081                              | 14,506           | 86,484       | 355,266                             | 345,512                                      |
| 1926-27.....               | 10,710       | 89,732       | 6,106                    | 5,273                     | 22,098               | 32,158                    | 145,651                              | 11,287           | 88,571       | 368,876                             | 271,128                                      |
| 1927-28.....               | 4,955        | 75,424       | 5,425                    | 4,819                     | 47,650               | 38,617                    | 280,901                              | 26,461           | 84,751       | 532,379                             | 248,035                                      |
| 1928-29.....               | 3,299        | 84,606       | 5,016                    | 3,173                     | 62,481               | 73,191                    | 202,489                              | 13,859           | 94,486       | 447,384                             | 270,937                                      |
| 1929-30.....               | 2,851        | 78,261       | 3,314                    | 2,474                     | 30,190               | 82,489                    | 284,302                              | 10,530           | 101,120      | 545,567                             | 220,476                                      |
| 1930-31.....               | 1,329        | 57,972       | 1,190                    | 844                       | 3,551                | 16,480                    | 87,526                               | 3,581            | 80,830       | 265,854                             | 149,557                                      |
| 1931-32.....               | 1,838        | 57,235       | 280                      | 118                       | 898                  | 22,483                    | 88,385                               | 3,427            | 67,038       | 254,084                             | 103,941                                      |
| 1932-33.....               | 991          | 55,923       | 33                       | 52                        | 709                  | 32,549                    | 58,192                               | 2,064            | 54,391       | 211,543                             | 52,304                                       |
| 1933-34 <sup>7</sup> ..... | 687          | 46,904       | 40                       | 25                        | 241                  | 39,543                    | 136,543                              | 3,745            | 87,894       | 334,586                             | 176,988                                      |

| Year beginning July        | Hair of the Angora (mohair) | Cotton, unmanufactured <sup>10</sup> | Silk <sup>11</sup> | Tobacco, unmanufactured | Rubber and similar gums, crude | Coffee       | Tea          | Cocoa or cacao beans | Sugar, raw and refined | Molasses          | Olives, green or in brine |
|----------------------------|-----------------------------|--------------------------------------|--------------------|-------------------------|--------------------------------|--------------|--------------|----------------------|------------------------|-------------------|---------------------------|
|                            | 1,000 pounds                | 1,000 bales                          | 1,000 pounds       | 1,000 pounds            | 1,000 pounds                   | 1,000 pounds | 1,000 pounds | 1,000 pounds         | 1,000 short tons       | 1,000 gallons     | 1,000 gallons             |
| 1909-10.....               | 180                         | 23,457                               | 48,533             | 154,621                 | 371,470                        | 85,626       | 103,668      | 2,047                | 31,292                 | 4,555             | 3,045                     |
| 1910-11.....               | 228                         | 26,666                               | 48,203             | 145,744                 | 875,367                        | 102,564      | 138,058      | 1,969                | 28,338                 | 5,077             | 3,446                     |
| 1911-12.....               | 230                         | 26,855                               | 54,740             | 175,966                 | 835,201                        | 101,407      | 145,969      | 2,052                | 28,328                 | 5,077             | 3,446                     |
| 1912-13.....               | 255                         | 32,101                               | 67,977             | 170,747                 | 863,131                        | 94,813       | 140,039      | 2,370                | 33,927                 | 5,816             | 3,822                     |
| 1913-14.....               | 258                         | 34,546                               | 61,175             | 161,777                 | 1,001,528                      | 91,131       | 176,268      | 2,533                | 51,410                 | 6,338             | 4,555                     |
| 1914-15.....               | 387                         | 31,053                               | 45,809             | 196,122                 | 1,118,691                      | 96,988       | 192,307      | 2,710                | 70,840                 | 6,842             | 5,901                     |
| 1915-16.....               | 487                         | 41,925                               | 48,078             | 304,183                 | 1,201,104                      | 109,866      | 243,232      | 2,817                | 85,717                 | 8,385             | 6,442                     |
| 1916-17.....               | 308                         | 40,351                               | 49,105             | 364,914                 | 1,319,871                      | 103,364      | 338,654      | 2,666                | 110,238                | 8,385             | 6,442                     |
| 1917-18.....               | 216                         | 43,681                               | 86,991             | 414,984                 | 1,143,891                      | 151,315      | 399,040      | 2,452                | 130,731                | 2,385             | 3,501                     |
| 1918-19.....               | 217                         | 50,069                               | 83,951             | 422,215                 | 1,046,029                      | 108,172      | 313,087      | 2,918                | 130,075                | 2,385             | 3,501                     |
| 1919-20.....               | 722                         | 58,410                               | 94,005             | 680,610                 | 1,414,228                      | 97,826       | 420,331      | 3,798                | 154,670                | 5,206             | 4,054                     |
| 1920-21.....               | 263                         | 34,778                               | 58,923             | 371,300                 | 1,348,926                      | 72,196       | 327,128      | 3,506                | 113,414                | 4,054             | 3,061                     |
| 1921-22.....               | 375                         | 57,437                               | 65,225             | 578,512                 | 1,238,012                      | 86,142       | 317,124      | 4,232                | 87,908                 | ( <sup>12</sup> ) | ( <sup>12</sup> )         |
| 1922-23.....               | 494                         | 63,188                               | 75,786             | 810,028                 | 1,305,188                      | 96,669       | 381,508      | 4,367                | 161,135                | ( <sup>12</sup> ) | ( <sup>12</sup> )         |
| 1923-24.....               | 305                         | 56,595                               | 54,497             | 633,489                 | 1,429,617                      | 105,443      | 382,971      | 3,765                | 174,037                | 6,848             | 5,901                     |
| 1924-25.....               | 2,404                       | 324                                  | 70,270             | 76,870                  | 824,434                        | 1,279,570    | 92,779       | 382,070              | 4,337                  | 215,778           | 5,901                     |
| 1925-26.....               | 6,463                       | 338                                  | 76,538             | 69,974                  | 962,659                        | 1,437,364    | 99,411       | 417,680              | 4,420                  | 256,246           | 5,901                     |
| 1926-27.....               | 6,547                       | 400                                  | 85,162             | 92,983                  | 993,272                        | 1,444,847    | 97,402       | 425,184              | 4,420                  | 280,259           | 5,212                     |
| 1927-28.....               | 2,204                       | 367                                  | 87,128             | 91,045                  | 959,245                        | 1,535,392    | 90,099       | 411,543              | 4,045                  | 248,427           | 6,458                     |
| 1928-29.....               | 3,134                       | 476                                  | 90,662             | 79,284                  | 1,252,130                      | 1,435,070    | 92,635       | 419,243              | 4,753                  | 296,550           | 6,955                     |
| 1929-30.....               | 1,073                       | 414                                  | 87,048             | 63,181                  | 1,157,817                      | 1,562,058    | 86,368       | 421,938              | 3,641                  | 253,114           | 8,452                     |
| 1930-31.....               | 474                         | 107                                  | 87,861             | 75,425                  | 1,048,768                      | 1,728,569    | 87,148       | 415,442              | 8,287                  | 217,001           | 7,429                     |
| 1931-32.....               | 0                           | 139                                  | 82,503             | 73,375                  | 1,098,501                      | 1,628,841    | 90,459       | 434,853              | 3,264                  | 205,968           | 7,057                     |
| 1932-33.....               | 113                         | 133                                  | 76,768             | 59,545                  | 789,186                        | 1,458,161    | 94,808       | 476,421              | 2,951                  | 145,450           | 4,674                     |
| 1933-34 <sup>7</sup> ..... | 1,320                       | 157                                  | 69,546             | 55,700                  | 1,221,575                      | 1,598,107    | 87,691       | 465,931              | 2,804                  | 211,169           | 5,806                     |

<sup>1</sup> Included with condensed and reported in value only prior to 1918-19. Includes cream, fresh 1918-19 to 1923-24. Beginning 1924-25 reported as milk, sweet, sour, and buttermilk.

<sup>2</sup> Included in "all other articles" prior to 1909-10.

<sup>3</sup> Reported in value only prior to 1918-19. Figures are imports for consumption and include corned beef, 1913-14 to 1924-25.

<sup>4</sup> Wet salted over 25 pounds.

<sup>5</sup> Dry salted over 12 pounds.

<sup>6</sup> Not separately classified.

<sup>7</sup> Beginning Jan. 1, 1924; 6 months' figure.

<sup>8</sup> Preliminary.

<sup>9</sup> Imports for consumption beginning 1933-34.

<sup>10</sup> Bales of 473 pounds net.

<sup>11</sup> Includes "silk, raw or as reeled from cocoon," "silk waste", and "silk cocoons."

<sup>12</sup> Reported in value only.

<sup>13</sup> Beginning Sept. 22, 1922.

TABLE 448.—Imports of selected agricultural products, annual 1909-10 to 1933-34—Continued

| Year beginning July   | Bananas       | Lemons <sup>14</sup> | Beans, dry    | Onions        | Tomatoes, fresh | Almonds in terms of shelled <sup>15</sup> | Peanuts in terms of shelled <sup>15</sup> | Walnuts in terms of shelled <sup>15</sup> | Copra <sup>16</sup> | Flaxseed      |
|-----------------------|---------------|----------------------|---------------|---------------|-----------------|---|---|---|---------------------|---------------|
|                       | 1,000 bunches | 1,000 boxes          | 1,000 bushels | 1,000 bushels | 1,000 pounds    | 1,000 pounds                              | 1,000 pounds                              | 1,000 pounds                              | 1,000 pounds        | 1,000 bushels |
| 1909-10               | 38,157        | 2,165                | 1,015         | 1,024         |                 | 18,556                                    | 29,276                                    | 33,641                                    | 21,306              | 5,002         |
| 1910-11               | 44,699        | 1,824                | 1,037         | 1,515         |                 | 15,523                                    | 18,834                                    | 33,619                                    | 37,817              | 10,499        |
| 1911-12               | 44,521        | 1,968                | 1,005         | 1,436         |                 | 17,231                                    | 11,248                                    | 37,214                                    | 64,581              | 6,842         |
| 1912-13               | 42,357        | 2,046                | 1,048         | 1,789         |                 | 13,866                                    | 14,989                                    | 17,213                                    | 34,268              | 5,294         |
| 1913-14               | 48,684        | (19)                 | 1,634         | 1,115         |                 | 15,027                                    | 38,726                                    | 20,800                                    | 45,437              | 8,653         |
| 1914-15               | 41,092        | (19)                 | 906           | 829           |                 | 13,679                                    | 19,338                                    | 20,490                                    | 90,547              | 10,666        |
| 1915-16               | 36,755        | (19)                 | 668           | 816           |                 | 14,546                                    | 25,407                                    | 23,733                                    | 110,078             | 14,679        |
| 1916-17               | 34,661        | (19)                 | 3,748         | 1,758         |                 | 19,916                                    | 32,585                                    | 23,839                                    | 247,036             | 12,394        |
| 1917-18               | 34,550        | (19)                 | 4,146         | 1,513         |                 | 20,845                                    | 75,463                                    | 16,252                                    | 439,996             | 13,367        |
| 1918-19               | 35,832        | (19)                 | 4,016         | 1,52          |                 | 25,615                                    | 20,425                                    | 9,057                                     | 201,995             | 8,427         |
| 1919-20               | 36,848        | (19)                 | 3,806         | 1,884         |                 | 15,861                                    | 128,390                                   | 28,961                                    | 215,522             | 23,392        |
| 1920-21               | 40,808        | (19)                 | 824           | 689           |                 | 15,861                                    | 46,202                                    | 15,902                                    | 192,246             | 16,170        |
| 1921-22               | 46,120        | 1,373                | 520           | 2,488         |                 | 28,036                                    | 9,678                                     | 35,174                                    | 249,722             | 13,632        |
| 1922-23               | 44,504        | 1,660                | 2,623         | 1,783         | (9)             | 24,345                                    | 45,013                                    | 25,970                                    | 306,100             | 25,006        |
| 1923-24               | 44,935        | 1,018                | 866           | 1,406         | 750,838         | 24,207                                    | 50,683                                    | 26,428                                    | 299,774             | 19,577        |
| 1924-25               | 50,513        | 1,264                | 1,421         | 2,075         | 69,216          | 22,503                                    | 93,191                                    | 36,623                                    | 328,652             | 13,419        |
| 1925-26               | 58,550        | 1,247                | 1,271         | 2,194         | 82,448          | 19,686                                    | 36,026                                    | 31,698                                    | 392,759             | 19,354        |
| 1926-27               | 57,102        | 659                  | 1,051         | 2,298         | 124,489         | 15,890                                    | 49,792                                    | 31,776                                    | 454,546             | 24,224        |
| 1927-28               | 64,029        | 1,308                | 2,465         | 1,399         | 113,357         | 18,496                                    | 63,783                                    | 20,347                                    | 456,158             | 18,112        |
| 1928-29               | 63,530        | 391                  | 1,505         | 2,050         | 128,627         | 18,673                                    | 30,412                                    | 24,500                                    | 629,397             | 23,494        |
| 1929-30               | 65,909        | 1,229                | 2,534         | 918           | 139,886         | 19,956                                    | 10,175                                    | 20,228                                    | 493,456             | 19,632        |
| 1930-31               | 57,841        | 350                  | 1,346         | 214           | 113,480         | 13,264                                    | 9,002                                     | 17,818                                    | 565,397             | 7,813         |
| 1931-32               | 51,785        | 176                  | 222           | 665           | 122,215         | 8,338                                     | 1,407                                     | 13,042                                    | 445,741             | 13,850        |
| 1932-33               | 45,114        | 146                  | 157           | 73            | 59,028          | 4,906                                     | 239                                       | 6,750                                     | 494,821             | 6,213         |
| 1933-34 <sup>17</sup> | 43,096        | 47                   | 145           | 80            | 46,150          | 3,412                                     | 320                                       | 5,682                                     | 653,182             | 17,901        |

| Year beginning July   | Jute and jute butts, unmanufactured | Manila or abaca | Sisal and henequen | Eggs, whole, in the shell | Eggs and egg yolks, dried, frozen, or prepared | Whole eggs, dried | Whole eggs, frozen | Yolks, dried | Yolks, frozen | Egg albumen, dried | Egg albumen, frozen, prepared, and preserved |
|-----------------------|-------------------------------------|-----------------|--------------------|---------------------------|--|-------------------|--------------------|--------------|---------------|--------------------|--|
|                       | 1,000 long tons                     | 1,000 long tons | 1,000 long tons    | 1,000 dozen               | 1,000 pounds                                   | 1,000 pounds      | 1,000 pounds       | 1,000 pounds | 1,000 pounds  | 1,000 pounds       | 1,000 pounds                                 |
| 1909-10               | 68                                  | 83              | 100                |                           |  |                   |                    |              |               |                    |  |
| 1910-11               | 65                                  | 74              | 118                |                           |  |                   |                    |              |               |                    |  |
| 1911-12               | 101                                 | 69              | 114                |                           |  |                   |                    |              |               |                    |  |
| 1912-13               | 125                                 | 74              | 154                | 1,367                     | 228  |                   |                    |              |               |                    |  |
| 1913-14               | 106                                 | 50              | 216                | 6,015                     | 3,420  |                   |                    |              |               |                    |  |
| 1914-15               | 83                                  | 51              | 186                | 3,047                     | 8,572  |                   |                    |              |               |                    |  |
| 1915-16               | 108                                 | 79              | 229                | 733                       | 6,022  |                   |                    |              |               |                    |  |
| 1916-17               | 113                                 | 77              | 143                | 1,110                     | 10,318   |                   |                    |              |               |                    |  |
| 1917-18               | 78                                  | 86              | 150                | 1,619                     | 14,598   |                   |                    |              |               |                    |  |
| 1918-19               | 53                                  | 68              | 153                | 848                       | 9,085  |                   |                    |              |               |                    |  |
| 1919-20               | 77                                  | 77              | 178                | 1,348                     | 24,091   |                   |                    |              |               |                    |  |
| 1920-21               | 90                                  | 52              | 159                | 3,316                     | 28,768   |                   |                    |              |               |                    |  |
| 1921-22               | 62                                  | 44              | 72                 | 1,224                     | 16,640   |                   |                    |              |               | (6)                |  |
| 1922-23               | 85                                  | 98              | 98                 | 535                       | 14,821   |                   |                    |              |               | 7,388              | 3,213  |
| 1923-24               | 84                                  | 98              | 97                 | 426                       | 17,830   | 7,544             | 7,106              | 7,522        | 7,120         | 6,642              | 7,636  |
| 1924-25               | 56                                  | 73              | 146                | 682                       |  | 1,884             | 8,751              | 4,281        | 4,151         | 3,257              | 1,106  |
| 1925-26               | 71                                  | 62              | 126                | 276                       |  | 1,305             | 12,647             | 6,004        | 5,662         | 4,490              | 5,119  |
| 1926-27               | 89                                  | 61              | 116                | 296                       |  | 1,132             | 8,114              | 4,468        | 4,601         | 3,859              | 3,967  |
| 1927-28               | 81                                  | 48              | 124                | 256                       |  | 675               | 611                | 3,486        | 1,229         | 2,361              | 553  |
| 1928-29               | 92                                  | 60              | 135                | 291                       |  | 2,133             | 12,616             | 5,130        | 4,581         | 2,898              | 610  |
| 1929-30               | 80                                  | 73              | 113                | 337                       |  | 1,839             | 9,824              | 7,819        | 3,475         | 4,363              | 955  |
| 1930-31               | 49                                  | 43              | 84                 | 301                       |  | 822               | 113                | 6,069        | 1,062         | 2,219              | 2  |
| 1931-32               | 52                                  | 27              | 109                | 282                       |  | 543               | 2                  | 1,920        | 443           | 1,722              | 0  |
| 1932-33               | 38                                  | 25              | 166                | 262                       |  | 19                | (18)               | 1,595        | 403           | 1,424              | 0  |
| 1933-34 <sup>18</sup> | 60                                  | 43              | 116                | 198                       |  | 7                 | 81                 | 1,809        | 308           | 361                | 0  |

<sup>14</sup> Not separately classified.<sup>15</sup> Beginning Jan. 1, 1924; 6 months' figure.<sup>16</sup> Preliminary.<sup>17</sup> Imports for consumption beginning 1933-34.<sup>18</sup> Reported in value only.<sup>19</sup> Boxes of 74 pounds.<sup>20</sup> Conversion factors used: almonds, 30 percent unshelled equals shelled; peanuts, 3 pounds unshelled equals 2 pounds shelled; walnuts, 42 percent unshelled equals shelled.<sup>21</sup> Reported as "coconut meat broken, or copra, not shredded, desiccated or prepared" 1909-10 to 1921-22; 1922-23 to 1924-25 reported as "copra, not prepared," 1925-26 to date reported as "copra."<sup>22</sup> July 1-Dec. 31, 1923.<sup>23</sup> Less than 500.

Bureau of Agricultural Economics; compiled from Commerce and Navigation of the United States 1909-18, and Monthly Summary of Foreign Commerce, June issues, 1919-34.

TABLE 449.—Exports (domestic) of principal agricultural products from the United States, by countries, 1926-27 to 1933-34

| Article and country to which exported | Year ended June 30  |                     |                     |                     |                     |                     |                     |                      |
|---------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
|                                       | 1926-27             | 1927-28             | 1928-29             | 1929-30             | 1930-31             | 1931-32             | 1932-33             | 1933-34 <sup>1</sup> |
| <b>ANIMAL PRODUCTS</b>                | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i>  |
| Butter:                               |                     |                     |                     |                     |                     |                     |                     |                      |
| United Kingdom.....                   | 0                   | 20                  | 5                   | 20                  | 80                  | ( <sup>2</sup> )    | 1                   | ( <sup>2</sup> )     |
| Honduras.....                         | 150                 | 143                 | 157                 | 164                 | 151                 | 139                 | 108                 | 72                   |
| Panama.....                           | 582                 | 311                 | 227                 | 342                 | 157                 | 135                 | 369                 | 206                  |
| Mexico.....                           | 859                 | 724                 | 672                 | 617                 | 426                 | 179                 | 128                 | 161                  |
| Cuba.....                             | 734                 | 479                 | 370                 | 96                  | 6                   | 9                   | 1                   | 1                    |
| Haiti, Republic of.....               | 498                 | 479                 | 479                 | 458                 | 394                 | 401                 | 291                 | 208                  |
| Other West Indies <sup>3</sup> .....  | 550                 | 391                 | 394                 | 380                 | 270                 | 244                 | 214                 | 186                  |
| Colombia.....                         | 163                 | 143                 | 164                 | 122                 | 61                  | 23                  | 12                  | 18                   |
| Peru.....                             | 356                 | 358                 | 451                 | 371                 | 67                  | 57                  | 14                  | 8                    |
| Venezuela.....                        | 381                 | 190                 | 264                 | 329                 | 269                 | 119                 | 45                  | 38                   |
| Philippine Islands.....               | 187                 | 190                 | 152                 | 210                 | 154                 | 84                  | 83                  | 383                  |
| Other countries.....                  | 588                 | 537                 | 443                 | 473                 | 258                 | 188                 | 120                 | 135                  |
| Total.....                            | 5,048               | 3,965               | 3,778               | 3,582               | 2,293               | 1,578               | 1,386               | 1,416                |
| Cheese:                               |                     |                     |                     |                     |                     |                     |                     |                      |
| Panama.....                           | 434                 | 432                 | 460                 | 485                 | 442                 | 535                 | 640                 | 505                  |
| Mexico.....                           | 670                 | 581                 | 423                 | 506                 | 293                 | 133                 | 69                  | 108                  |
| Canada.....                           | 350                 | 259                 | 170                 | 176                 | 179                 | 84                  | 44                  | 66                   |
| Honduras.....                         | 68                  | 69                  | 82                  | 105                 | 86                  | 73                  | 50                  | 31                   |
| British Honduras.....                 | 67                  | 72                  | 76                  | 64                  | 61                  | 52                  | 25                  | 12                   |
| Cuba.....                             | 832                 | 359                 | 405                 | 170                 | 72                  | 143                 | 56                  | 59                   |
| Virgin Islands.....                   | 62                  | 65                  | 70                  | 65                  | 54                  | 62                  | 59                  | 65                   |
| Haiti, Republic of.....               | 86                  | 80                  | 72                  | 58                  | 59                  | 51                  | 26                  | 26                   |
| Other West Indies <sup>3</sup> .....  | 331                 | 186                 | 218                 | 129                 | 94                  | 69                  | 72                  | 28                   |
| China.....                            | 252                 | 145                 | 89                  | 45                  | 29                  | 39                  | 36                  | 110                  |
| Philippine Islands.....               | 110                 | 146                 | 130                 | 134                 | 143                 | 158                 | 150                 | 89                   |
| Other countries.....                  | 511                 | 479                 | 377                 | 402                 | 221                 | 165                 | 119                 | 154                  |
| Total.....                            | 3,773               | 2,873               | 2,572               | 2,339               | 1,733               | 1,564               | 1,346               | 1,253                |
| Milk:                                 |                     |                     |                     |                     |                     |                     |                     |                      |
| Condensed:                            |                     |                     |                     |                     |                     |                     |                     |                      |
| Total Europe.....                     | 424                 | 151                 | 70                  | 21                  | 14                  | 6                   | 31                  | 5                    |
| Cuba.....                             | 12,843              | 11,462              | 13,103              | 13,196              | 3,651               | 1,378               | 360                 | 3                    |
| Philippine Islands.....               | 6,471               | 7,575               | 7,339               | 7,847               | 7,566               | 5,817               | 1,382               | 2,625                |
| Japan.....                            | 4,029               | 5,385               | 5,473               | 4,701               | 4,167               | 3,543               | 0                   | ( <sup>2</sup> )     |
| Hong Kong.....                        | 2,065               | 3,764               | 3,739               | 3,905               | 2,872               | 2,339               | 1,325               | 1                    |
| China.....                            | 3,621               | 2,513               | 2,840               | 2,173               | 1,819               | 886                 | 699                 | 12                   |
| Mexico.....                           | 1,308               | 985                 | 883                 | 1,055               | 605                 | 281                 | 224                 | 219                  |
| Jamaica.....                          | 754                 | 467                 | 523                 | 380                 | 612                 | 595                 | 1,073               | 1,077                |
| Honduras.....                         | 319                 | 402                 | 549                 | 550                 | 515                 | 334                 | 282                 | 261                  |
| Costa Rica.....                       | 586                 | 595                 | 746                 | 524                 | 370                 | 208                 | 120                 | 115                  |
| Venezuela.....                        | 369                 | 439                 | 550                 | 480                 | 452                 | 298                 | 176                 | 133                  |
| Other countries.....                  | 3,030               | 3,237               | 3,750               | 3,439               | 1,291               | 805                 | 666                 | 724                  |
| Total.....                            | 35,799              | 36,975              | 39,565              | 37,771              | 22,934              | 16,540              | 6,347               | 5,175                |
| Evaporated:                           |                     |                     |                     |                     |                     |                     |                     |                      |
| United Kingdom.....                   | 27,418              | 23,805              | 21,759              | 11,877              | 15,978              | 15,287              | 926                 | 1,038                |
| Other Europe.....                     | 3,109               | 596                 | 508                 | 457                 | 367                 | 218                 | 31                  | 72                   |
| Total Europe.....                     | 30,527              | 24,401              | 22,267              | 12,334              | 16,345              | 15,505              | 957                 | 1,110                |
| Philippine Islands.....               | 12,806              | 15,563              | 16,372              | 17,153              | 18,684              | 16,279              | 19,598              | 16,920               |
| Panama.....                           | 4,127               | 3,589               | 4,606               | 4,805               | 2,898               | 4,308               | 4,616               | 4,597                |
| Peru.....                             | 4,215               | 3,569               | 4,027               | 3,602               | 1,583               | 1,355               | 242                 | 830                  |
| China.....                            | 3,025               | 3,035               | 3,447               | 2,056               | 816                 | 529                 | 555                 | 747                  |
| British Malaya.....                   | 1,932               | 2,817               | 2,761               | 3,359               | 1,026               | 592                 | 618                 | 526                  |
| Cuba.....                             | 2,958               | 2,647               | 2,272               | 2,935               | 456                 | 207                 | 179                 | 287                  |
| Japan.....                            | 1,616               | 2,466               | 2,544               | 2,785               | 2,867               | 2,446               | 184                 | 196                  |
| Mexico.....                           | 2,714               | 2,157               | 2,185               | 2,274               | 1,296               | 685                 | 700                 | 907                  |
| Netherlands West Indies.....          | 672                 | 834                 | 1,488               | 1,765               | 988                 | 1,235               | 1,373               | 1,033                |
| Netherlands Indies.....               | 1,221               | 1,339               | 1,422               | 1,991               | 1,772               | 1,256               | 879                 | 818                  |
| Siam.....                             | 606                 | 1,426               | 1,119               | 1,363               | 743                 | 1,242               | 1,847               | 1,848                |
| Newfoundland and Labrador.....        | 797                 | 1,103               | 1,035               | 906                 | 970                 | 808                 | 503                 | 561                  |
| Other countries.....                  | 5,927               | 6,972               | 7,349               | 6,413               | 5,573               | 2,636               | 1,405               | 2,533                |
| Total.....                            | 73,143              | 71,968              | 72,894              | 63,801              | 56,052              | 49,083              | 33,666              | 32,913               |

<sup>1</sup> Preliminary<sup>2</sup> Less than 500.<sup>3</sup> Excludes Bermudas

TABLE 449.—*Exports (domestic) of principal agricultural products from the United States, by countries, 1926-27 to 1933-34—Continued*

| Article and country to which exported                             | Year ended June 30 |              |              |              |              |              |              |                      |
|---|--------------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------------|
|   | 1926-27            | 1927-28      | 1928-29      | 1929-30      | 1930-31      | 1931-32      | 1932-33      | 1933-34 <sup>1</sup> |
| <b>ANIMAL PRODUCTS—continued</b>                                  |                    |              |              |              |              |              |              |                      |
| <b>Pork:</b>  |                    |              |              |              |              |              |              |                      |
| Bacon, including Cumberland sides: <sup>4</sup>                   | 1,000 pounds       | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 pounds         |
| United Kingdom.....   | 68,220             | 50,127       | 53,364       | 57,443       | 26,203       | 10,403       | 3,902        | 3,910                |
| Germany.....  | 6,818              | 9,338        | 5,982        | 8,468        | 1,151        | 2,043        | 1,300        | 2,541                |
| Italy.....  | 1,439              | 8,113        | 15,106       | 8,289        | 764          | 822          | 1,808        | 2,130                |
| Finland.....  | 4,493              | 6,075        | 4,633        | 3,734        | 1,549        | 722          | 1,176        | 2,106                |
| Norway.....   | 2,422              | 3,244        | 2,742        | 2,642        | 712          | 174          | 134          | 266                  |
| Sweden.....   | 5,061              | 4,689        | 3,649        | 4,648        | 3,264        | 946          | 1,416        | 1,549                |
| Irish Free State.....   | 64                 | 402          | 933          | 2,273        | 1,126        | 266          | 25           | 0                    |
| Netherlands.....  | 2,502              | 632          | 1,198        | 2,959        | 61           | 657          | 76           | 780                  |
| Other Europe.....   | 7,542              | 16,434       | 15,628       | 15,933       | 582          | 255          | 974          | 2,553                |
| Total Europe.....   | 98,561             | 99,554       | 103,235      | 106,389      | 35,412       | 16,288       | 10,811       | 15,835               |
| Cuba.....   | 21,070             | 19,107       | 16,698       | 15,957       | 12,399       | 7,128        | 4,629        | 4,531                |
| Canada.....   | 4,584              | 5,173        | 5,769        | 5,617        | 2,388        | 650          | 270          | 676                  |
| Panama.....   | 228                | 341          | 401          | 499          | 421          | 330          | 388          | 472                  |
| Newfoundland and Labrador   | 1,181              | 731          | 626          | 557          | 372          | 278          | 270          | 542                  |
| Mexico.....   | 285                | 221          | 225          | 233          | 189          | 114          | 109          | 126                  |
| Other countries.....  | 1,634              | 1,840        | 2,291        | 2,418        | 1,231        | 788          | 1,223        | 1,659                |
| Total.....  | 127,543            | 126,967      | 129,245      | 131,670      | 52,412       | 25,576       | 17,700       | 23,841               |
| <b>Hams and shoulders, including Wiltshire sides:<sup>4</sup></b> |                    |              |              |              |              |              |              |                      |
| United Kingdom.....   | 124,391            | 104,020      | 100,959      | 103,169      | 81,294       | 53,126       | 61,647       | 62,328               |
| Belgium.....  | 451                | 660          | 1,003        | 2,136        | 1,464        | 607          | 574          | 211                  |
| Other Europe.....   | 1,424              | 1,846        | 2,024        | 1,155        | 236          | 193          | 1,071        | 745                  |
| Total Europe.....   | 126,266            | 106,526      | 103,986      | 106,460      | 82,994       | 58,926       | 63,292       | 63,284               |
| Cuba.....   | 6,549              | 8,167        | 7,435        | 6,307        | 4,272        | 4,559        | 3,181        | 2,271                |
| Canada.....   | 4,803              | 6,134        | 6,309        | 11,370       | 5,895        | 694          | 225          | 225                  |
| Other countries.....  | 6,032              | 6,992        | 7,666        | 7,435        | 6,588        | 5,155        | 4,515        | 5,708                |
| Total.....  | 143,649            | 127,819      | 125,396      | 131,572      | 99,749       | 69,334       | 71,213       | 71,488               |
| <b>Canned:</b>  |                    |              |              |              |              |              |              |                      |
| United Kingdom.....   | 5,595              | 7,632        | 6,555        | 10,737       | 9,066        | 8,751        | 8,106        | 10,344               |
| Other Europe.....   | 80                 | 97           | 145          | 238          | 193          | 78           | 66           | 121                  |
| Total Europe.....   | 5,675              | 7,729        | 6,700        | 10,975       | 9,259        | 8,829        | 8,172        | 10,465               |
| Philippine Islands.....   | 48                 | 32           | 36           | 64           | 112          | 173          | 216          | 304                  |
| Canada.....   | 188                | 179          | 244          | 241          | 225          | 101          | 47           | 59                   |
| China.....  | 11                 | 7            | 7            | 145          | 127          | 167          | 205          | 56                   |
| Panama.....   | 14                 | 15           | 23           | 39           | 90           | 169          | 200          | 195                  |
| Other countries.....  | 795                | 652          | 964          | 1,319        | 739          | 550          | 396          | 792                  |
| Total.....  | 6,731              | 8,614        | 7,974        | 12,783       | 10,552       | 10,019       | 9,236        | 11,871               |
| <b>Fresh:</b>   |                    |              |              |              |              |              |              |                      |
| United Kingdom.....   | 7,128              | 6,418        | 4,547        | 10,527       | 8,098        | 6,672        | 4,582        | 24,689               |
| Other Europe.....   | 260                | 1,002        | 2,515        | 3,685        | 464          | 241          | 889          | 929                  |
| Total Europe.....   | 7,388              | 7,420        | 7,062        | 14,212       | 8,562        | 6,913        | 5,471        | 25,618               |
| Cuba.....   | 1,763              | 1,557        | 1,732        | 1,013        | 424          | 161          | 47           | 15                   |
| Canada.....   | 590                | 798          | 582          | 1,091        | 410          | 72           | 18           | 195                  |
| Panama.....   | 420                | 558          | 444          | 733          | 771          | 1,430        | 1,844        | 1,530                |
| Philippine Islands.....   | 143                | 194          | 288          | 239          | 222          | 267          | 255          | 210                  |
| Other countries.....  | 577                | 532          | 533          | 888          | 704          | 437          | 547          | 731                  |
| Total.....  | 10,881             | 11,059       | 10,641       | 18,771       | 11,093       | 9,270        | 8,182        | 28,299               |
| <b>Pickled:</b>   |                    |              |              |              |              |              |              |                      |
| United Kingdom.....   | 3,857              | 5,184        | 7,608        | 5,094        | 2,945        | 1,585        | 1,130        | 1,485                |
| Norway.....   | 394                | 722          | 854          | 799          | 354          | 210          | 230          | 117                  |
| Germany.....  | 134                | 289          | 366          | 328          | 89           | 54           | 37           | 185                  |
| Other Europe.....   | 416                | 821          | 1,420        | 1,194        | 327          | 279          | 471          | 766                  |
| Total Europe.....   | 4,801              | 7,016        | 10,248       | 7,415        | 3,725        | 2,128        | 1,888        | 2,527                |
| Cuba.....   | 7,760              | 7,626        | 10,550       | 9,798        | 4,862        | 1,923        | 1,534        | 1,113                |
| Canada.....   | 5,800              | 7,056        | 8,596        | 11,211       | 4,356        | 3,058        | 2,565        | 3,974                |
| Newfoundland and Labrador   | 3,532              | 3,734        | 4,530        | 4,792        | 3,681        | 3,423        | 3,720        | 5,714                |
| British West Indies and Bermudas.....                             | 2,730              | 2,851        | 2,810        | 221          | 2,226        | 2,464        | 2,420        | 2,957                |
| Haiti, Republic of.....   | 917                | 1,055        | 838          | 719          | 544          | 513          | 515          | 518                  |
| Other countries.....  | 2,422              | 2,312        | 2,334        | 5,677        | 1,724        | 1,720        | 1,654        | 2,270                |
| Total.....  | 27,962             | 31,650       | 39,906       | 39,833       | 21,118       | 15,229       | 14,276       | 19,070               |

<sup>1</sup> Preliminary.<sup>2</sup> Beginning July 1931, includes "Wiltshire sides."<sup>3</sup> Beginning July 1931, "Wiltshire sides" included with "Bacon, including Cumberland sides."

TABLE 449.—*Exports (domestic) of principal agricultural products from the United States, by countries, 1926-27 to 1933-34—Continued*

| Article and country to which exported      | Year ended June 30  |                     |                     |                     |                     |                     |                     |                      |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
|  | 1926-27             | 1927-28             | 1928-29             | 1929-30             | 1930-31             | 1931-32             | 1932-33             | 1933-34 <sup>1</sup> |
| <b>ANIMAL PRODUCTS—continued</b>           |                     |                     |                     |                     |                     |                     |                     |                      |
| <b>Lard:</b>                               | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i>  |
| United Kingdom.....                        | 222,086             | 233,564             | 229,899             | 240,147             | 256,353             | 239,358             | 255,769             | 313,805              |
| Germany.....                               | 174,621             | 176,771             | 195,695             | 180,074             | 107,817             | 142,354             | 158,226             | 72,599               |
| Netherlands.....                           | 48,071              | 35,784              | 36,992              | 48,584              | 26,476              | 29,980              | 42,066              | 24,271               |
| Italy.....                                 | 7,642               | 20,384              | 29,200              | 19,865              | 6,064               | 7,125               | 5,646               | 9,264                |
| Belgium.....                               | 12,718              | 14,541              | 14,841              | 18,700              | 9,406               | 5,750               | 10,160              | 16,850               |
| Other Europe.....                          | 26,338              | 38,144              | 49,070              | 56,031              | 14,791              | 8,799               | 12,776              | 12,786               |
| Total Europe.....                          | 489,376             | 519,188             | 555,697             | 563,401             | 420,409             | 433,366             | 484,633             | 449,575              |
| Cuba.....                                  | 79,599              | 78,469              | 84,316              | 79,860              | 49,004              | 38,406              | 10,023              | 14,247               |
| Mexico.....                                | 41,963              | 52,475              | 56,728              | 68,531              | 67,491              | 35,483              | 38,085              | 47,630               |
| Colombia.....                              | 12,623              | 15,782              | 23,375              | 19,479              | 11,836              | 4,284               | 113                 | 103                  |
| Canada.....                                | 14,888              | 16,172              | 17,864              | 15,112              | 12,224              | 6,197               | 3,462               | 282                  |
| Other countries.....                       | 37,363              | 34,312              | 42,934              | 40,777              | 24,706              | 24,903              | 23,963              | 35,160               |
| Total.....                                 | 675,812             | 716,398             | 780,914             | 787,160             | 585,670             | 542,639             | 560,299             | 546,997              |
| <b>Lard, neutral:</b>                      |                     |                     |                     |                     |                     |                     |                     |                      |
| Netherlands.....                           | 5,260               | 6,784               | 4,710               | 6,260               | 3,264               | 2,554               | 1,618               | 598                  |
| Germany.....                               | 5,895               | 5,623               | 4,023               | 3,010               | 1,421               | 1,152               | 887                 | 135                  |
| United Kingdom.....                        | 3,530               | 5,096               | 3,919               | 2,320               | 1,526               | 745                 | 602                 | 424                  |
| Norway.....                                | 1,039               | 1,228               | 895                 | 755                 | 529                 | 455                 | 210                 | 89                   |
| Denmark.....                               | 726                 | 1,176               | 894                 | 1,379               | 1,453               | 804                 | 647                 | 911                  |
| Sweden.....                                | 912                 | 696                 | 649                 | 787                 | 766                 | 765                 | 471                 | 734                  |
| Other Europe.....                          | 921                 | 1,206               | 1,463               | 1,197               | 1,015               | 916                 | 1,050               | 1,481                |
| Total Europe.....                          | 18,283              | 21,809              | 16,553              | 15,708              | 9,974               | 7,391               | 5,483               | 4,372                |
| Other countries.....                       | 1,774               | 1,990               | 1,782               | 1,075               | 785                 | 290                 | 75                  | 44                   |
| Total.....                                 | 20,057              | 23,799              | 18,315              | 16,783              | 10,759              | 7,681               | 5,558               | 4,416                |
| <b>Oleo oil:</b>                           |                     |                     |                     |                     |                     |                     |                     |                      |
| Germany.....                               | 25,443              | 18,287              | 16,835              | 14,630              | 13,934              | 11,570              | 11,671              | 4,755                |
| Netherlands.....                           | 27,270              | 17,608              | 16,744              | 22,158              | 15,868              | 11,698              | 8,808               | 4,770                |
| United Kingdom.....                        | 18,691              | 10,092              | 16,328              | 11,735              | 13,179              | 9,883               | 9,825               | 11,065               |
| Norway.....                                | 5,460               | 3,596               | 2,763               | 2,549               | 2,018               | 1,500               | 1,031               | 719                  |
| Greece.....                                | 3,972               | 454                 | 602                 | 750                 | 1,587               | 1,519               | 461                 | 428                  |
| Belgium.....                               | 1,875               | 1,576               | 1,780               | 1,470               | 1,837               | 1,716               | 1,964               | 2,079                |
| Denmark.....                               | 2,691               | 2,079               | 2,062               | 2,865               | 2,408               | 2,134               | 1,654               | 1,020                |
| Other Europe.....                          | 2,726               | 1,939               | 2,367               | 1,883               | 1,808               | 1,415               | 1,625               | 1,949                |
| Total Europe.....                          | 88,128              | 61,611              | 59,481              | 58,040              | 52,639              | 41,435              | 37,039              | 26,785               |
| Other countries.....                       | 4,592               | 3,240               | 3,706               | 3,053               | 2,322               | 2,327               | 2,593               | 644                  |
| Total.....                                 | 92,720              | 64,851              | 63,187              | 61,093              | 54,961              | 43,762              | 39,632              | 27,429               |
| <b>VEGETABLE PRODUCTS</b>                  |                     |                     |                     |                     |                     |                     |                     |                      |
| <b>Cotton, unmanufactured:<sup>2</sup></b> | <i>1,000 bales</i>  | <i>1,000 bales</i>  | <i>1,000 bales</i>  | <i>1,000 bales</i>  | <i>1,000 bales</i>  | <i>1,000 bales</i>  | <i>1,000 bales</i>  | <i>1,000 bales</i>   |
| <b>Lint:</b>                               |                     |                     |                     |                     |                     |                     |                     |                      |
| Germany.....                               | 2,829               | 2,090               | 1,891               | 1,770               | 1,752               | 1,629               | 1,907               | 1,477                |
| United Kingdom.....                        | 2,623               | 1,443               | 1,918               | 1,806               | 1,108               | 1,314               | 1,520               | 1,412                |
| France.....                                | 1,063               | 904                 | 841                 | 880                 | 986                 | 487                 | 805                 | 799                  |
| Italy.....                                 | 841                 | 708                 | 765                 | 705                 | 495                 | 673                 | 833                 | 722                  |
| Belgium.....                               | 286                 | 213                 | 217                 | 182                 | 143                 | 143                 | 196                 | 135                  |
| Spain.....                                 | 259                 | 321                 | 301                 | 285                 | 268                 | 309                 | 350                 | 320                  |
| Netherlands.....                           | 251                 | 144                 | 168                 | 143                 | 147                 | 157                 | 137                 | 121                  |
| Other Europe.....                          | 661                 | 605                 | 497                 | 316                 | 214                 | 297                 | 444                 | 608                  |
| Total Europe.....                          | 8,813               | 6,428               | 6,598               | 5,567               | 5,113               | 5,009               | 6,282               | 5,594                |
| Japan.....                                 | 1,644               | 1,007               | 1,378               | 1,071               | 1,233               | 2,398               | 1,717               | 2,080                |
| China.....                                 | 262                 | 136                 | 245                 | 232                 | 393                 | 1,143               | 352                 | 366                  |
| Other countries.....                       | 562                 | 319                 | 304                 | 226                 | 309                 | 441                 | 296                 | 346                  |
| Total.....                                 | 11,281              | 7,890               | 8,520               | 7,096               | 7,048               | 8,989               | 8,647               | 8,366                |
| <b>Linters:</b>                            |                     |                     |                     |                     |                     |                     |                     |                      |
| Germany.....                               | 154                 | 132                 | 120                 | 70                  | 56                  | 59                  | 76                  | 85                   |
| France.....                                | 26                  | 36                  | 32                  | 26                  | 27                  | 24                  | 34                  | 25                   |
| United Kingdom.....                        | 51                  | 22                  | 16                  | 7                   | 11                  | 16                  | 41                  | 53                   |
| Belgium.....                               | 12                  | 7                   | 12                  | 8                   | 5                   | 1                   | 14                  | 2                    |
| Other Europe.....                          | 15                  | 15                  | 18                  | 14                  | 14                  | 16                  | 25                  | 19                   |
| Total Europe.....                          | 258                 | 212                 | 198                 | 125                 | 113                 | 116                 | 190                 | 184                  |
| Canada.....                                | 20                  | 18                  | 19                  | 17                  | 16                  | 14                  | 13                  | 11                   |
| Other countries.....                       | 0                   | 1                   | 2                   | 1                   | 3                   | 15                  | 15                  | 21                   |
| Total.....                                 | 278                 | 231                 | 219                 | 143                 | 132                 | 145                 | 218                 | 216                  |

<sup>1</sup> Preliminary.<sup>2</sup> Bales of 500 pounds gross.

TABLE 449.—*Exports (domestic) of principal agricultural products from the United States, by countries, 1926-27 to 1933-34—Continued*

| Article and country to which exported | Year ended June 30   |                      |                      |                      |                      |                      |                      |                      |
|---------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                                       | 1926-27              | 1927-28              | 1928-29              | 1929-30              | 1930-31              | 1931-32              | 1932-33              | 1933-34 <sup>1</sup> |
| VEGETABLE PRODUCTS—continued          |                      |                      |                      |                      |                      |                      |                      |                      |
| Fruits:                               |                      |                      |                      |                      |                      |                      |                      |                      |
| Dried:                                |                      |                      |                      |                      |                      |                      |                      |                      |
| Apples:                               | <i>1,000 pounds</i>  | <i>1,000 pounds</i>  | <i>1,000 pounds</i>  | <i>1,000 pounds</i>  | <i>1,000 pounds</i>  | <i>1,000 pounds</i>  | <i>1,000 pounds</i>  | <i>1,000 pounds</i>  |
| Germany.....                          | 12,158               | 10,877               | 22,085               | 11,425               | 13,470               | 12,055               | 17,835               | 19,971               |
| Netherlands.....                      | 9,568                | 3,315                | 12,451               | 4,323                | 8,768                | 8,154                | 7,589                | 7,236                |
| Sweden.....                           | 2,278                | 2,524                | 2,985                | 3,015                | 1,846                | 2,501                | 4,043                | 3,037                |
| Denmark.....                          | 1,371                | 1,884                | 1,674                | 894                  | 1,161                | 1,429                | 1,205                | 848                  |
| United Kingdom.....                   | 2,282                | 1,018                | 2,618                | 1,522                | 1,755                | 2,198                | 1,366                | 1,104                |
| Other Europe.....                     | 3,656                | 1,617                | 6,995                | 1,880                | 5,598                | 4,656                | 4,001                | 4,578                |
| Total Europe.....                     | 31,313               | 20,735               | 48,808               | 23,059               | 37,593               | 30,993               | 36,019               | 36,764               |
| Other countries.....                  | 1,357                | 969                  | 1,216                | 710                  | 528                  | 564                  | 582                  | 575                  |
| Total.....                            | 32,670               | 21,704               | 50,024               | 23,769               | 38,121               | 31,557               | 36,601               | 37,339               |
| Apricots:                             |                      |                      |                      |                      |                      |                      |                      |                      |
| Germany.....                          | 4,593                | 6,512                | 7,742                | 6,091                | 8,695                | 11,798               | 10,790               | 12,450               |
| Netherlands.....                      | 3,316                | 4,651                | 3,750                | 2,493                | 2,933                | 3,913                | 2,812                | 3,192                |
| United Kingdom.....                   | 2,084                | 1,964                | 1,422                | 1,019                | 1,243                | 2,789                | 3,170                | 2,605                |
| Belgium.....                          | 1,038                | 1,374                | 1,691                | 891                  | 1,932                | 2,007                | 1,766                | 2,201                |
| Norway.....                           | 945                  | 1,260                | 988                  | 1,327                | 786                  | 1,389                | 1,132                | 717                  |
| Sweden.....                           | 952                  | 994                  | 776                  | 939                  | 835                  | 1,151                | 1,212                | 952                  |
| Denmark.....                          | 1,962                | 2,469                | 1,959                | 2,066                | 2,290                | 3,369                | 1,453                | 1,774                |
| France.....                           | 409                  | 1,273                | 3,015                | 1,310                | 2,458                | 7,139                | 8,250                | 8,827                |
| Other Europe.....                     | 477                  | 661                  | 936                  | 728                  | 820                  | 1,370                | 888                  | 1,362                |
| Total Europe.....                     | 15,776               | 21,153               | 22,279               | 16,864               | 21,992               | 34,925               | 31,473               | 34,080               |
| Canada.....                           | 1,257                | 1,920                | 1,614                | 1,431                | 1,036                | 1,833                | 1,942                | 1,532                |
| Other countries.....                  | 868                  | 606                  | 759                  | 806                  | 619                  | 684                  | 853                  | 1,004                |
| Total.....                            | 17,901               | 23,684               | 24,652               | 19,101               | 23,647               | 37,622               | 34,268               | 36,616               |
| Prunes:                               |                      |                      |                      |                      |                      |                      |                      |                      |
| Germany.....                          | 38,553               | 79,732               | 77,883               | 44,789               | 97,631               | 62,539               | 34,858               | 64,463               |
| United Kingdom.....                   | 40,173               | 45,601               | 40,836               | 28,143               | 39,824               | 42,757               | 31,610               | 32,161               |
| France.....                           | 27,217               | 27,390               | 59,822               | 9,298                | 46,571               | 46,882               | 41,019               | 29,398               |
| Netherlands.....                      | 10,242               | 23,140               | 17,286               | 5,584                | 18,903               | 9,309                | 7,611                | 7,632                |
| Sweden.....                           | 6,854                | 7,047                | 5,434                | 6,744                | 8,712                | 8,788                | 6,803                | 6,780                |
| Italy.....                            | 1,368                | 5,533                | 7,700                | 2,867                | 15,851               | 13,262               | 6,236                | 3,345                |
| Denmark.....                          | 6,136                | 9,992                | 6,611                | 6,034                | 9,426                | 7,995                | 6,605                | 6,184                |
| Belgium.....                          | 6,019                | 9,402                | 9,885                | 3,387                | 9,614                | 6,652                | 6,397                | 7,903                |
| Norway.....                           | 2,590                | 5,036                | 3,685                | 3,019                | 5,313                | 5,063                | 4,861                | 3,848                |
| Other Europe.....                     | 6,558                | 10,701               | 11,652               | 6,992                | 15,970               | 14,935               | 11,665               | 14,637               |
| Total Europe.....                     | 145,710              | 223,574              | 240,794              | 118,857              | 267,815              | 218,172              | 157,265              | 176,351              |
| Canada.....                           | 20,454               | 23,272               | 18,965               | 16,137               | 16,466               | 17,161               | 15,107               | 16,027               |
| Other countries.....                  | 9,380                | 13,779               | 13,292               | 9,945                | 11,983               | 8,602                | 9,982                | 10,454               |
| Total.....                            | 175,544              | 260,625              | 273,051              | 142,989              | 296,254              | 243,935              | 182,354              | 202,832              |
| Raisins:                              |                      |                      |                      |                      |                      |                      |                      |                      |
| United Kingdom.....                   | 49,991               | 70,034               | 71,375               | 36,443               | 40,293               | 48,458               | 47,466               | 30,250               |
| Germany.....                          | 16,039               | 18,733               | 23,022               | 14,059               | 16,899               | 16,899               | 15,494               | 14,730               |
| Netherlands.....                      | 13,857               | 18,598               | 24,278               | 7,436                | 8,827                | 7,315                | 4,553                | 4,328                |
| Denmark.....                          | 1,994                | 1,593                | 2,244                | 1,286                | 1,385                | 1,634                | 1,770                | 1,346                |
| Belgium.....                          | 4,315                | 5,543                | 6,074                | 2,263                | 2,778                | 2,904                | 1,254                | 1,435                |
| France.....                           | 2,144                | 3,496                | 4,465                | 2,750                | 3,303                | 3,507                | 4,073                | 2,872                |
| Sweden.....                           | 6,065                | 10,285               | 14,782               | 9,639                | 10,510               | 8,916                | 8,383                | 6,601                |
| Other Europe.....                     | 3,909                | 3,643                | 6,555                | 3,734                | 3,221                | 4,677                | 5,786                | 6,558                |
| Total Europe.....                     | 97,714               | 131,925              | 152,785              | 77,615               | 84,940               | 94,410               | 88,779               | 69,120               |
| Canada.....                           | 37,400               | 40,148               | 39,635               | 28,668               | 22,894               | 14,576               | 9,295                | 10,949               |
| China.....                            | 3,549                | 4,144                | 7,574                | 4,791                | 1,816                | 1,627                | 1,717                | 2,249                |
| Japan.....                            | 2,801                | 3,086                | 2,961                | 2,992                | 2,140                | 1,922                | 1,489                | 1,158                |
| Other countries.....                  | 10,873               | 13,796               | 18,801               | 14,631               | 13,310               | 9,678                | 11,227               | 10,478               |
| Total.....                            | 152,337              | 193,099              | 221,766              | 128,697              | 125,100              | 122,213              | 112,507              | 95,954               |
| Fresh:                                |                      |                      |                      |                      |                      |                      |                      |                      |
| Apples:                               | <i>1,000 barrels</i> | <i>1,000 barrels</i> | <i>1,000 barrels</i> | <i>1,000 barrels</i> | <i>1,000 barrels</i> | <i>1,000 barrels</i> | <i>1,000 barrels</i> | <i>1,000 barrels</i> |
| United Kingdom.....                   | 3,305                | 1,004                | 1,720                | 953                  | 954                  | 1,893                | 1,048                | 392                  |
| Germany.....                          | 361                  | 27                   | 236                  | 50                   | 404                  | 73                   | 225                  | 272                  |
| Netherlands.....                      | 141                  | 2                    | 201                  | 17                   | 334                  | 49                   | 50                   | 80                   |
| Belgium.....                          | 80                   | 1                    | 321                  | 14                   | 313                  | 189                  | 132                  | 191                  |
| France.....                           | 4                    | ( <sup>2</sup> )     | 82                   | 8                    | 131                  | 367                  | 35                   | 20                   |

<sup>1</sup> Preliminary.<sup>2</sup> Less than 500.

TABLE 449.—*Exports (domestic) of principal agricultural products from the United States, by countries, 1926-27 to 1933-34—Continued*

| Article and country to which exported | Year ended June 30 |                  |                  |                  |                  |                  |                  |                      |
|---------------------------------------|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------------|
|                                       | 1926-27            | 1927-28          | 1928-29          | 1929-30          | 1930-31          | 1931-32          | 1932-33          | 1933-34 <sup>1</sup> |
| <b>VEGETABLE PRODUCTS—continued</b>   |                    |                  |                  |                  |                  |                  |                  |                      |
| <b>Fruits—Continued.</b>              |                    |                  |                  |                  |                  |                  |                  |                      |
| <b>Fresh—Continued.</b>               |                    |                  |                  |                  |                  |                  |                  |                      |
| <b>Apples—Continued.</b>              |                    |                  |                  |                  |                  |                  |                  |                      |
| Denmark.....                          | 1,000<br>barrels   | 1,000<br>barrels | 1,000<br>barrels | 1,000<br>barrels | 1,000<br>barrels | 1,000<br>barrels | 1,000<br>barrels | 1,000<br>barrels     |
| Other Europe.....                     | 151                | 42               | 81               | 41               | 65               | 73               | 19               | 19                   |
|                                       | 112                | 108              | 165              | 126              | 67               | 117              | 103              | 35                   |
| Total Europe.....                     | 4,154              | 1,184            | 2,786            | 1,209            | 2,268            | 2,761            | 1,612            | 979                  |
| Other countries.....                  | 329                | 165              | 219              | 218              | 211              | 57               | 42               | 67                   |
| Total.....                            | 4,483              | 1,349            | 3,005            | 1,427            | 2,479            | 2,818            | 1,654            | 1,046                |
| United Kingdom.....                   | 1,000<br>boxes     | 1,000<br>boxes   | 1,000<br>boxes   | 1,000<br>boxes   | 1,000<br>boxes   | 1,000<br>boxes   | 1,000<br>boxes   | 1,000<br>boxes       |
| Germany.....                          | 3,723              | 2,709            | 4,835            | 2,655            | 3,991            | 3,475            | 2,429            | 2,183                |
| Netherlands.....                      | 1,237              | 787              | 2,695            | 946              | 3,476            | 1,938            | 2,222            | 2,329                |
| France.....                           | 670                | 72               | 1,687            | 272              | 2,417            | 1,303            | 1,660            | 1,627                |
| Other Europe.....                     | 6                  | 1                | 77               | 49               | 677              | 913              | 883              | 1,133                |
|                                       | 506                | 506              | 762              | 549              | 824              | 771              | 554              | 560                  |
| Total Europe.....                     | 6,142              | 4,025            | 10,057           | 4,471            | 11,385           | 8,450            | 7,748            | 7,832                |
| Canada.....                           | 730                | 542              | 636              | 500              | 475              | 238              | 113              | 40                   |
| Argentina.....                        | 155                | 227              | 336              | 264              | 261              | 167              | 91               | 80                   |
| Brazil.....                           | 172                | 115              | 212              | 224              | 170              | 127              | 128              | 91                   |
| Philippine Islands.....               | 120                | 88               | 150              | 88               | 112              | 105              | 104              | 77                   |
| Other countries.....                  | 525                | 387              | 635              | 421              | 501              | 380              | 320              | 460                  |
| Total.....                            | 7,844              | 5,384            | 12,026           | 5,998            | 12,904           | 9,467            | 8,504            | 8,580                |
| Belgium.....                          | 1,000<br>baskets   | 1,000<br>baskets | 1,000<br>baskets | 1,000<br>baskets | 1,000<br>baskets | 1,000<br>baskets | 1,000<br>baskets | 1,000<br>baskets     |
| United Kingdom.....                   |                    |                  |                  |                  |                  | 7 12             | 63               | 223                  |
| Germany.....                          |                    |                  |                  |                  |                  | 7 39             | 88               | 78                   |
| France.....                           |                    |                  |                  |                  |                  | 7 16             | 51               | 70                   |
| Canada.....                           |                    |                  |                  |                  |                  | 7 25             | 32               | 93                   |
| Other countries.....                  |                    |                  |                  |                  |                  | 7 18             | 34               | 26                   |
|                                       |                    |                  |                  |                  |                  | 7 1              | 20               | 51                   |
| Total.....                            |                    |                  |                  |                  |                  | 7 111            | 288              | 541                  |
| Pears:                                | 1,000<br>pounds    | 1,000<br>pounds  | 1,000<br>pounds  | 1,000<br>pounds  | 1,000<br>pounds  | 1,000<br>pounds  | 1,000<br>pounds  | 1,000<br>pounds      |
| United Kingdom.....                   | 35,141             | 18,993           | 34,902           | 22,223           | 68,981           | 47,441           | 61,064           | 55,942               |
| Netherlands.....                      | 1,082              | 527              | 1,090            | 883              | 9,812            | 4,589            | 10,599           | 10,689               |
| Germany.....                          | 51                 | 135              | 627              | 1,217            | 6,619            | 1,538            | 4,687            | 2,954                |
| Sweden.....                           | 94                 | 175              | 1,296            | 1,170            | 3,176            | 2,415            | 3,515            | 2,379                |
| France.....                           | 2                  | 0                | 104              | 6                | 1,732            | 10,012           | 20,921           | 19,831               |
| Belgium.....                          | 0                  | 0                | 15               | 26               | 1,129            | 721              | 22               | 505                  |
| Other Europe.....                     | 4                  | 79               | 105              | 269              | 1,880            | 1,699            | 828              | 1,043                |
| Total Europe.....                     | 36,374             | 19,909           | 38,139           | 25,794           | 92,329           | 68,415           | 101,636          | 93,343               |
| Canada.....                           | 27,754             | 22,119           | 32,437           | 28,273           | 30,101           | 16,274           | 11,815           | 9,085                |
| Brazil.....                           | 4,079              | 3,469            | 5,536            | 5,533            | 4,753            | 2,071            | 2,807            | 3,470                |
| Argentina.....                        | 2,169              | 1,873            | 2,751            | 3,904            | 3,340            | 1,478            | 1,432            | 1,160                |
| Cuba.....                             | 2,095              | 2,044            | 1,779            | 1,818            | 1,214            | 821              | 658              | 394                  |
| Mexico.....                           | 536                | 688              | 900              | 880              | 803              | 109              | 159              | 137                  |
| Venezuela.....                        | 101                | 114              | 153              | 179              | 356              | 234              | 173              | 221                  |
| Panama.....                           | 174                | 190              | 255              | 201              | 277              | 341              | 317              | 365                  |
| Other countries.....                  | 595                | 650              | 897              | 942              | 1,497            | 1,059            | 990              | 2,883                |
| Total.....                            | 73,877             | 51,056           | 82,847           | 62,024           | 134,670          | 90,702           | 119,987          | 111,008              |
| Lemons:                               | 1,000<br>boxes     | 1,000<br>boxes   | 1,000<br>boxes   | 1,000<br>boxes   | 1,000<br>boxes   | 1,000<br>boxes   | 1,000<br>boxes   | 1,000<br>boxes       |
| Canada.....                           | 287                | 154              | 228              | 132              | 210              | 209              | 117              | 151                  |
| New Zealand.....                      | 18                 | 14               | 16               | 9                | 10               | 3                | 1                | 17                   |
| China.....                            | 14                 | 11               | 13               | 10               | 8                | 7                | 6                | 6                    |
| Japan.....                            | 13                 | 15               | 17               | 18               | 19               | 22               | 12               | 7                    |
| Philippine Islands.....               | 8                  | 5                | 7                | 6                | 7                | 6                | 5                | 5                    |
| Hong Kong.....                        | 3                  | 3                | 2                | 2                | 2                | 2                | 2                | 2                    |
| Panama.....                           | 2                  | 2                | 2                | 3                | 2                | 2                | 1                | 2                    |
| Other countries.....                  | 22                 | 10               | 17               | 9                | 10               | 6                | 6                | 5                    |
| Total.....                            | 387                | 214              | 302              | 189              | 268              | 258              | 150              | 155                  |

<sup>1</sup> Preliminary.<sup>2</sup> 6 months, January-June.

TABLE 449.—*Exports (domestic) of principal agricultural products from the United States, by countries, 1926-27 to 1933-34—Continued*

| Article and country to which exported | Year ended June 30 |                 |                 |                 |                 |                 |                 |                      |
|---------------------------------------|--------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------------|
|                                       | 1926-27            | 1927-28         | 1928-29         | 1929-30         | 1930-31         | 1931-32         | 1932-33         | 1933-34 <sup>1</sup> |
| VEGETABLE PRODUCTS—continued.         |                    |                 |                 |                 |                 |                 |                 |                      |
| Fruits—Continued.                     |                    |                 |                 |                 |                 |                 |                 |                      |
| Fresh—Continued.                      |                    |                 |                 |                 |                 |                 |                 |                      |
| Oranges:                              | 1,000<br>boxes     | 1,000<br>boxes  | 1,000<br>boxes  | 1,000<br>boxes  | 1,000<br>boxes  | 1,000<br>boxes  | 1,000<br>boxes  | 1,000<br>boxes       |
| United Kingdom.....                   | 403                | 402             | 709             | 796             | 669             | 628             | 787             | 871                  |
| Canada.....                           | 2,036              | 2,346           | 3,151           | 2,568           | 2,873           | 2,470           | 2,082           | 2,010                |
| Other countries.....                  | 301                | 240             | 363             | 310             | 442             | 436             | 522             | 568                  |
| Total.....                            | 3,340              | 2,988           | 4,223           | 3,674           | 3,984           | 3,534           | 3,391           | 3,449                |
| Grapefruit:                           |                    |                 |                 |                 |                 |                 |                 |                      |
| United Kingdom.....                   | 310                | 333             | 561             | 496             | 741             | 692             | 534             | 505                  |
| Canada.....                           | 264                | 349             | 335             | 308             | 408             | 453             | 328             | 372                  |
| Germany.....                          | 8                  | 6               | 8               | 10              | 23              | 13              | 5               | 7                    |
| France.....                           | 4                  | 4               | 4               | 5               | 7               | 6               | 9               | 17                   |
| Other countries.....                  | 27                 | 27              | 32              | 35              | 43              | 38              | 26              | 45                   |
| Total.....                            | 613                | 719             | 940             | 854             | 1,222           | 1,202           | 902             | 946                  |
| Canned:                               | 1,000<br>pounds    | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds      |
| Apricots:                             |                    |                 |                 |                 |                 |                 |                 |                      |
| United Kingdom.....                   | 29,533             | 23,013          | 18,115          | 26,526          | 15,423          | 20,329          | 17,151          | 21,251               |
| France.....                           | 1,458              | 781             | 2,677           | 1,311           | 703             | 679             | 545             | 622                  |
| Other Europe.....                     | 1,909              | 2,236           | 2,656           | 2,685           | 1,213           | 1,476           | 1,246           | 1,620                |
| Total Europe.....                     | 32,900             | 26,030          | 23,448          | 30,522          | 17,339          | 22,484          | 18,942          | 23,493               |
| Canada.....                           | 1,422              | 1,316           | 1,323           | 1,376           | 687             | 107             | 108             | 42                   |
| Other countries.....                  | 1,575              | 1,667           | 1,478           | 1,337           | 998             | 570             | 454             | 780                  |
| Total.....                            | 35,897             | 29,013          | 26,249          | 33,235          | 19,024          | 23,161          | 19,504          | 24,315               |
| Grapefruit:                           |                    |                 |                 |                 |                 |                 |                 |                      |
| United Kingdom.....                   |                    |                 |                 |                 | 7 4,782         | 6,264           | 14,402          | 31,326               |
| Other Europe.....                     |                    |                 |                 |                 | 7 107           | 81              | 120             | 156                  |
| Total Europe.....                     |                    |                 |                 |                 | 7 4,889         | 6,345           | 14,522          | 31,482               |
| Canada.....                           |                    |                 |                 |                 | 7 1,269         | 209             | 156             | 238                  |
| Other countries.....                  |                    |                 |                 |                 | 7 146           | 95              | 121             | 178                  |
| Total.....                            |                    |                 |                 |                 | 7 6,304         | 6,649           | 14,799          | 31,898               |
| Fruits for salad:                     |                    |                 |                 |                 |                 |                 |                 |                      |
| United Kingdom.....                   |                    |                 | 7 14,755        | 26,191          | 28,248          | 29,859          | 25,022          | 37,761               |
| Other Europe.....                     |                    |                 | 7 573           | 1,228           | 1,011           | 1,383           | 1,136           | 1,503                |
| Total Europe.....                     |                    |                 | 7 15,328        | 27,419          | 29,259          | 31,242          | 26,158          | 39,264               |
| Canada.....                           |                    |                 | 7 559           | 1,153           | 669             | 184             | 58              | 92                   |
| Other countries.....                  |                    |                 | 7 665           | 1,576           | 1,691           | 776             | 718             | 1,002                |
| Total.....                            |                    |                 | 7 16,552        | 30,148          | 31,619          | 32,202          | 26,934          | 40,353               |
| Peaches:                              |                    |                 |                 |                 |                 |                 |                 |                      |
| United Kingdom.....                   | 64,874             | 65,942          | 73,261          | 54,383          | 61,422          | 58,703          | 67,578          | 72,987               |
| France.....                           | 1,906              | 1,256           | 4,252           | 1,301           | 1,213           | 901             | 760             | 961                  |
| Netherlands.....                      | 1,096              | 1,739           | 2,530           | 1,733           | 1,275           | 1,522           | 2,247           | 2,080                |
| Other Europe.....                     | 2,961              | 3,119           | 5,524           | 4,560           | 2,730           | 2,776           | 2,087           | 2,688                |
| Total Europe.....                     | 70,837             | 72,056          | 85,567          | 61,977          | 66,640          | 63,902          | 72,672          | 78,686               |
| Canada.....                           | 5,105              | 6,873           | 8,813           | 7,517           | 3,038           | 414             | 436             | 137                  |
| Cuba.....                             | 2,258              | 2,203           | 1,410           | 1,085           | 1,047           | 210             | 121             | 256                  |
| Other countries.....                  | 3,696              | 5,502           | 5,648           | 3,891           | 5,038           | 1,774           | 1,770           | 2,335                |
| Total.....                            | 81,896             | 86,634          | 101,438         | 74,470          | 75,763          | 66,300          | 74,999          | 81,464               |
| Pears:                                |                    |                 |                 |                 |                 |                 |                 |                      |
| United Kingdom.....                   | 59,128             | 46,822          | 73,910          | 47,827          | 68,763          | 68,024          | 57,819          | 74,454               |
| Irish Free State.....                 | 320                | 394             | 678             | 639             | 533             | 851             | 796             | 1,210                |
| France.....                           | 539                | 216             | 909             | 416             | 474             | 360             | 278             | 321                  |
| Netherlands.....                      | 523                | 518             | 714             | 274             | 165             | 104             | 352             | 380                  |
| Germany.....                          | 240                | 189             | 459             | 446             | 353             | 329             | 69              | 172                  |
| Other Europe.....                     | 667                | 677             | 739             | 809             | 858             | 462             | 299             | 389                  |
| Total Europe.....                     | 61,467             | 48,816          | 77,409          | 50,411          | 71,146          | 70,130          | 59,613          | 76,926               |
| Canada.....                           | 952                | 954             | 1,425           | 1,258           | 800             | 201             | 300             | 67                   |
| Cuba.....                             | 1,389              | 1,024           | 1,107           | 701             | 662             | 105             | 64              | 140                  |
| Netherlands Indies.....               | 259                | 153             | 299             | 267             | 250             | 141             | 72              | 153                  |

<sup>1</sup> Preliminary.<sup>2</sup> 6 months, January-June.



TABLE 449.—*Exports (domestic) of principal agricultural products from the United States, by countries, 1926-27 to 1933-34—Continued*

| Article and country to which exported | Year ended June 30 |                  |                  |                  |                  |                  |                  |                      |
|---------------------------------------|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------------|
|                                       | 1926-27            | 1927-28          | 1928-29          | 1929-30          | 1930-31          | 1931-32          | 1932-33          | 1933-34 <sup>1</sup> |
| <b>VEGETABLE PRODUCTS—continued</b>   |                    |                  |                  |                  |                  |                  |                  |                      |
| <b>Fruits—Continued.</b>              |                    |                  |                  |                  |                  |                  |                  |                      |
| <b>Canned—Continued.</b>              |                    |                  |                  |                  |                  |                  |                  |                      |
| Pears—Continued.                      |                    |                  |                  |                  |                  |                  |                  |                      |
| British India.....                    | 1,000<br>pounds    | 1,000<br>pounds  | 1,000<br>pounds  | 1,000<br>pounds  | 1,000<br>pounds  | 1,000<br>pounds  | 1,000<br>pounds  | 1,000<br>pounds      |
| Philippine Islands.....               | 185                | 155              | 186              | 210              | 266              | 125              | 71               | 118                  |
| Other countries.....                  | 61                 | 92               | 50               | 53               | 50               | 53               | 41               | 46                   |
| Total.....                            | 1,781              | 1,477            | 2,176            | 1,809            | 1,180            | 815              | 601              | 934                  |
| <b>Total.....</b>                     | <b>66,104</b>      | <b>52,671</b>    | <b>82,652</b>    | <b>54,709</b>    | <b>74,354</b>    | <b>71,570</b>    | <b>60,762</b>    | <b>78,384</b>        |
| <b>Pineapples:</b>                    |                    |                  |                  |                  |                  |                  |                  |                      |
| United Kingdom.....                   | 11,468             | 14,187           | 13,281           | 14,232           | 12,015           | 7,348            | 4,750            | 6,919                |
| Germany.....                          | 9,171              | 16,656           | 14,043           | 11,472           | 5,471            | 4,768            | 4,033            | 5,952                |
| France.....                           | 2,816              | 2,511            | 3,264            | 4,222            | 2,600            | 2,484            | 2,053            | 2,164                |
| Netherlands.....                      | 1,769              | 2,262            | 1,633            | 2,006            | 2,089            | 656              | 1,079            | 1,596                |
| Sweden.....                           | 1,219              | 1,664            | 1,592            | 1,705            | 887              | 729              | 551              | 757                  |
| Other Europe.....                     | 2,504              | 3,730            | 3,749            | 3,769            | 3,880            | 2,968            | 2,488            | 2,936                |
| <b>Total Europe.....</b>              | <b>28,467</b>      | <b>41,010</b>    | <b>37,462</b>    | <b>37,409</b>    | <b>27,842</b>    | <b>18,953</b>    | <b>14,984</b>    | <b>20,324</b>        |
| Canada.....                           | 6,312              | 7,250            | 7,675            | 6,144            | 5,630            | 780              | 288              | 637                  |
| China.....                            | 508                | 728              | 391              | 597              | 613              | 335              | 111              | 198                  |
| Other countries.....                  | 2,139              | 2,239            | 2,005            | 2,159            | 1,223            | 852              | 560              | 672                  |
| <b>Total.....</b>                     | <b>37,426</b>      | <b>51,227</b>    | <b>47,533</b>    | <b>46,309</b>    | <b>35,308</b>    | <b>20,920</b>    | <b>15,923</b>    | <b>21,831</b>        |
| <b>Grain and grain products:</b>      |                    |                  |                  |                  |                  |                  |                  |                      |
| <b>Barley (grain):</b>                |                    |                  |                  |                  |                  |                  |                  |                      |
| Germany.....                          | 1,000<br>bushels   | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels | 1,000<br>bushels     |
| United Kingdom.....                   | 2,066              | 11,599           | 13,065           | 1,821            | 0                | 77               | 123              | 0                    |
| Netherlands.....                      | 8,951              | 10,151           | 13,161           | 9,370            | 8,670            | 4,237            | 6,607            | 5,324                |
| Belgium.....                          | 815                | 2,581            | 3,909            | 479              | 8                | 234              | 175              | 0                    |
| Other Europe.....                     | 1,576              | 642              | 1,782            | 651              | 775              | 171              | 1,734            | 91                   |
| <b>Total Europe.....</b>              | <b>14,254</b>      | <b>25,607</b>    | <b>32,686</b>    | <b>12,777</b>    | <b>9,990</b>     | <b>4,881</b>     | <b>8,651</b>     | <b>5,575</b>         |
| Canada.....                           | 2,184              | 10,453           | 23,886           | 8,144            | 9                | 116              | 380              | 95                   |
| Other countries.....                  | 606                | 520              | 424              | 623              | 908              | 87               | 144              | 265                  |
| <b>Total.....</b>                     | <b>17,044</b>      | <b>36,580</b>    | <b>56,996</b>    | <b>21,544</b>    | <b>10,302</b>    | <b>5,084</b>     | <b>9,155</b>     | <b>5,935</b>         |
| <b>Corn (grain):</b>                  |                    |                  |                  |                  |                  |                  |                  |                      |
| Netherlands.....                      | 560                | 4,311            | 7,977            | 126              | 50               | 65               | 759              | 154                  |
| Germany.....                          | 2                  | 2,520            | 4,241            | 0                | 69               | 114              | 156              | 58                   |
| United Kingdom.....                   | 1,268              | 1,885            | 8,237            | 20               | 8                | 322              | 1,001            | 263                  |
| Denmark.....                          | 563                | 845              | 896              | 0                | 1                | 0                | 197              | ( <sup>2</sup> )     |
| Canada.....                           | 10,536             | 6,454            | 11,082           | 7,890            | 1,414            | 2,681            | 5,183            | 3,627                |
| Cuba.....                             | 2,016              | 1,021            | 765              | 226              | 18               | 2                | 47               | 58                   |
| Mexico.....                           | 2,124              | 323              | 572              | 1,297            | 823              | 7                | 8                | 7                    |
| Other countries.....                  | 494                | 1,015            | 6,974            | 295              | 146              | 153              | 842              | 238                  |
| <b>Total.....</b>                     | <b>17,563</b>      | <b>18,374</b>    | <b>40,744</b>    | <b>9,354</b>     | <b>2,529</b>     | <b>3,344</b>     | <b>8,193</b>     | <b>4,405</b>         |
| <b>Oats (grain):</b>                  |                    |                  |                  |                  |                  |                  |                  |                      |
| United Kingdom.....                   | 1,259              | 645              | 1,177            | 13               | 0                | 0                | 45               | 0                    |
| Belgium.....                          | 352                | 123              | 257              | 0                | 0                | 0                | 82               | 0                    |
| Germany.....                          | 297                | 115              | 0                | 0                | 0                | 0                | 0                | 0                    |
| France.....                           | 239                | 44               | 141              | 0                | 0                | 0                | 0                | 0                    |
| Other Europe.....                     | 385                | 316              | 1,620            | 2                | 0                | 2                | 595              | 0                    |
| <b>Total Europe.....</b>              | <b>2,532</b>       | <b>1,243</b>     | <b>3,195</b>     | <b>15</b>        | <b>0</b>         | <b>2</b>         | <b>722</b>       | <b>0</b>             |
| Canada.....                           | 5,198              | 3,426            | 6,501            | 3,913            | 680              | 1,952            | 2,977            | 289                  |
| Cuba.....                             | 1,170              | 1,028            | 861              | 490              | 61               | 352              | 228              | 11                   |
| Mexico.....                           | 132                | 98               | 51               | 44               | 35               | 34               | 33               | 21                   |
| Other countries.....                  | 213                | 239              | 240              | 173              | 131              | 139              | 130              | 130                  |
| <b>Total.....</b>                     | <b>9,245</b>       | <b>6,034</b>     | <b>10,848</b>    | <b>4,635</b>     | <b>907</b>       | <b>2,479</b>     | <b>4,085</b>     | <b>451</b>           |
| <b>Oatmeal:</b>                       |                    |                  |                  |                  |                  |                  |                  |                      |
| United Kingdom.....                   | 1,000<br>pounds    | 1,000<br>pounds  | 1,000<br>pounds  | 1,000<br>pounds  | 1,000<br>pounds  | 1,500<br>pounds  | 1,000<br>pounds  | 1,000<br>pounds      |
| Finland.....                          | 18,885             | 14,447           | 23,775           | 8,358            | 4,833            | 8,990            | 2,537            | 156                  |
| Netherlands.....                      | 13,219             | 9,471            | 17,335           | 8,441            | 4,431            | 2,569            | 1                | 0                    |
| Belgium.....                          | 25,930             | 7,485            | 14,525           | 7,804            | 9,479            | 6,658            | 5,864            | 2,172                |
| Other Europe.....                     | 4,793              | 2,890            | 3,064            | 801              | 1,955            | 1,775            | 1,536            | 1,316                |
| <b>Total Europe.....</b>              | <b>12,036</b>      | <b>5,456</b>     | <b>9,249</b>     | <b>2,637</b>     | <b>1,160</b>     | <b>1,300</b>     | <b>1,494</b>     | <b>1,999</b>         |
| <b>Total Europe.....</b>              | <b>74,806</b>      | <b>39,749</b>    | <b>67,948</b>    | <b>28,041</b>    | <b>17,868</b>    | <b>21,292</b>    | <b>11,432</b>    | <b>5,613</b>         |

<sup>1</sup> Preliminary.<sup>2</sup> Less than 500.<sup>3</sup> Exports to Netherlands.

TABLE 449.—*Exports (domestic) of principal agricultural products from the United States, by countries, 1926-27 to 1933-34—Continued*

| Article and country to which exported | Year ended June 30   |                      |                      |                      |                      |                      |                      |                      |
|---------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                                       | 1926-27              | 1927-28              | 1928-29              | 1929-30              | 1930-31              | 1931-32              | 1932-33              | 1933-34 <sup>1</sup> |
| <b>VEGETABLE PRODUCTS—continued.</b>  |                      |                      |                      |                      |                      |                      |                      |                      |
| Grains and grain products—Contd.      | <i>1,000 pounds</i>  | <i>1,000 pounds</i>  | <i>1,000 pounds</i>  | <i>1,000 pounds</i>  | <i>1,000 pounds</i>  | <i>1,000 pounds</i>  | <i>1,000 pounds</i>  | <i>1,000 pounds</i>  |
| Oatmeal—Continued.                    |                      |                      |                      |                      |                      |                      |                      |                      |
| South America.....                    | 1,164                | 9,757                | 11,339               | 10,431               | 8,063                | 5,101                | 4,142                | 4,826                |
| Mexico.....                           | 4,027                | 3,739                | 3,802                | 4,054                | 3,202                | 1,640                | 1,423                | 453                  |
| Canada.....                           | 1,913                | 3,532                | 1,556                | 5,402                | 1,048                | 812                  | 604                  | 336                  |
| British India.....                    | 850                  | 1,770                | 1,594                | 2,013                | 1,400                | 926                  | 44                   | 80                   |
| Other countries.....                  | 21,574               | 9,595                | 10,956               | 10,012               | 8,287                | 5,483                | 5,228                | 5,913                |
| Total.....                            | 104,334              | 68,192               | 97,245               | 59,953               | 39,886               | 35,254               | 22,963               | 17,171               |
| Rice (grain):                         |                      |                      |                      |                      |                      |                      |                      |                      |
| Germany.....                          | 36,917               | 35,851               | 43,799               | 37,915               | 34,527               | 41,670               | 29,855               | 18,172               |
| United Kingdom.....                   | 33,675               | 35,459               | 41,812               | 35,854               | 32,364               | 35,716               | 15,534               | 12,919               |
| Belgium.....                          | 18,764               | 12,778               | 23,167               | 8,959                | 14,735               | 11,994               | 10,244               | 9,007                |
| France.....                           | 5,169                | 12,388               | 16,065               | 13,419               | 18,187               | 22,190               | 19,095               | 23,602               |
| Netherlands.....                      | 17,386               | 23,660               | 19,427               | 15,080               | 18,155               | 11,672               | 8,810                | 6,687                |
| Greece.....                           | 4,331                | 1,574                | 6,739                | 4,662                | 8,479                | 12,302               | 2,479                | 5,368                |
| Sweden.....                           | 1,255                | 4,801                | 7,590                | 2,838                | 4,103                | 4,157                | 3,139                | 2,606                |
| Denmark.....                          | 1,822                | 3,267                | 6,770                | 3,861                | 2,397                | 2,374                | 1,970                | 1,215                |
| Other Europe.....                     | 2,595                | 4,041                | 7,743                | 9,161                | 9,743                | 10,597               | 4,206                | 6,782                |
| Total Europe.....                     | 121,914              | 133,819              | 173,117              | 131,749              | 142,690              | 152,672              | 95,332               | 86,358               |
| South America.....                    | 24,847               | 41,205               | 78,719               | 69,297               | 54,899               | 17,618               | 14,373               | 1,502                |
| Central America.....                  | 3,468                | 5,888                | 5,852                | 5,031                | 4,607                | 2,678                | 1,696                | 588                  |
| Japan.....                            | 68,518               | 2,020                | 14,609               | 935                  | 378                  | 363                  | 53                   | 0                    |
| Canada.....                           | 7,525                | 14,227               | 19,800               | 18,239               | 17,342               | 20,323               | 12,253               | 8,973                |
| Other countries.....                  | 8,276                | 33,273               | 21,308               | 9,908                | 4,633                | 20,819               | 12,199               | 3,142                |
| Total.....                            | 234,548              | 230,432              | 313,405              | 235,159              | 224,549              | 214,473              | 135,906              | 100,563              |
| Rye (grain):                          | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> |
| United Kingdom.....                   | 2,345                | 1,710                | 1,174                | 21                   | 0                    | 0                    | 0                    | 0                    |
| Netherlands.....                      | 1,768                | 1,408                | 868                  | 0                    | 21                   | 278                  | 167                  | 0                    |
| Germany.....                          | 1,577                | 1,245                | 364                  | 21                   | 0                    | 290                  | 0                    | 0                    |
| Denmark.....                          | 510                  | 466                  | 406                  | 69                   | 48                   | 54                   | 28                   | 0                    |
| Norway.....                           | 489                  | 298                  | 57                   | 3                    | 0                    | 0                    | 0                    | 0                    |
| France.....                           | 289                  | 145                  | 13                   | 11                   | 17                   | 0                    | 0                    | 0                    |
| Belgium.....                          | 441                  | 135                  | 9                    | 0                    | 41                   | 0                    | 0                    | 0                    |
| Italy.....                            | 0                    | 0                    | 0                    | 0                    | 40                   | 0                    | 0                    | 0                    |
| Other Europe.....                     | 66                   | 567                  | 490                  | 17                   | 1                    | 0                    | 0                    | 0                    |
| Total Europe.....                     | 7,485                | 5,974                | 3,381                | 142                  | 168                  | 622                  | 195                  | 0                    |
| Canada.....                           | 14,118               | 20,080               | 5,913                | 2,347                | 0                    | 223                  | 116                  | 16                   |
| Other countries.....                  | 10                   | 10                   | 82                   | 49                   | 11                   | 7                    | (?)                  | 5                    |
| Total.....                            | 21,613               | 26,064               | 9,346                | 2,538                | 179                  | 852                  | 311                  | 21                   |
| Wheat (grain):                        |                      |                      |                      |                      |                      |                      |                      |                      |
| United Kingdom.....                   | 39,341               | 36,574               | 16,276               | 23,931               | 17,863               | 15,112               | 1,558                | 1,001                |
| Netherlands.....                      | 17,131               | 11,559               | 5,149                | 6,197                | 6,943                | 8,681                | 700                  | 99                   |
| Italy.....                            | 10,407               | 10,450               | 5,047                | 905                  | 3,675                | 1,441                | 398                  | 0                    |
| Belgium.....                          | 8,926                | 8,797                | 3,232                | 6,314                | 7,394                | 10,707               | 2,372                | 171                  |
| Germany.....                          | 7,287                | 5,582                | 1,674                | 4,769                | 1,722                | 3,530                | 263                  | 0                    |
| France.....                           | 16,079               | 5,127                | 2,215                | 2,214                | 7,559                | 6,148                | 1,121                | 38                   |
| Greece.....                           | 4,816                | 2,819                | 3,592                | 7,009                | 3,379                | 11,149               | 3,149                | 0                    |
| Irish Free State.....                 | 4,282                | 3,113                | 3,551                | 3,088                | 2,146                | 1,180                | 1,065                | 2,037                |
| Other Europe.....                     | 2,929                | 5,177                | 5,909                | 2,252                | 991                  | 573                  | 59                   | 18                   |
| Total Europe.....                     | 111,198              | 89,203               | 46,645               | 56,679               | 51,972               | 58,521               | 10,685               | 3,364                |
| Canada.....                           | 26,793               | 45,563               | 41,190               | 16,777               | 12,493               | 5,799                | 492                  | 17                   |
| Japan.....                            | 7,336                | 6,304                | 3,782                | 9,185                | 3,063                | 1,646                | 118                  | 4,840                |
| China.....                            | 1,099                | 0                    | 1,241                | 140                  | 1,872                | 14,350               | 0                    | 9,839                |
| Other countries.....                  | 9,824                | 4,929                | 10,256               | 9,394                | 6,965                | 16,205               | 9,592                | 739                  |
| Total.....                            | 156,250              | 145,999              | 103,114              | 92,175               | 76,365               | 96,521               | 20,887               | 18,799               |
| Wheat flour:                          | <i>1,000 barrels</i> | <i>1,000 barrels</i> | <i>1,000 barrels</i> | <i>1,000 barrels</i> | <i>1,000 barrels</i> | <i>1,000 barrels</i> | <i>1,000 barrels</i> | <i>1,000 barrels</i> |
| Netherlands.....                      | 1,568                | 1,530                | 1,084                | 1,031                | 1,297                | 178                  | 138                  | 83                   |
| United Kingdom.....                   | 1,733                | 1,224                | 886                  | 1,560                | 1,378                | 775                  | 91                   | 69                   |
| Germany.....                          | 834                  | 534                  | 312                  | 452                  | 243                  | 145                  | 25                   | 15                   |
| Greece.....                           | 282                  | 113                  | 49                   | 30                   | 12                   | 7                    | 1                    | 5                    |
| Irish Free State.....                 | 94                   | 62                   | 39                   | 145                  | 155                  | 117                  | 69                   | 51                   |

<sup>1</sup> Preliminary.<sup>2</sup> Less than 500.<sup>3</sup> Includes 9,106,000 bushels to Brazil.

TABLE 449.—*Exports (domestic) of principal agricultural products from the United States, by countries, 1926-27 to 1933-34—Continued*

| Article and country to which exported   | Year ended June 30 |               |               |               |               |               |               |                      |
|---|--------------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------------|
|   | 1926-27            | 1927-28       | 1928-29       | 1929-30       | 1930-31       | 1931-32       | 1932-33       | 1933-34 <sup>1</sup> |
| <b>VEGETABLE PRODUCTS—continued.</b>    |                    |               |               |               |               |               |               |                      |
| Grain and grain products—Contd.         | 1,000 barrels      | 1,000 barrels | 1,000 barrels | 1,000 barrels | 1,000 barrels | 1,000 barrels | 1,000 barrels | 1,000 barrels        |
| Wheat flour—Continued.                  |                    |               |               |               |               |               |               |                      |
| Denmark.....                            | 439                | 528           | 423           | 535           | 508           | 284           | 53            | 40                   |
| Finland.....                            | 480                | 482           | 400           | 341           | 282           | 139           | 27            | 19                   |
| Norway.....                             | 336                | 324           | 259           | 363           | 313           | 273           | 177           | 124                  |
| Other Europe.....                       | 297                | 296           | 256           | 283           | 358           | 120           | 107           | 113                  |
| Total Europe.....                       | 6,063              | 5,093         | 3,708         | 4,740         | 4,546         | 2,088         | 688           | 519                  |
| Cuba.....                               | 1,199              | 1,216         | 1,204         | 1,199         | 968           | 871           | 738           | 809                  |
| Other West Indies <sup>2</sup> .....    | 747                | 676           | 809           | 663           | 590           | 550           | 436           | 216                  |
| Hong Kong.....                          | 618                | 929           | 888           | 752           | 843           | 680           | 427           | 196                  |
| Brazil.....                             | 904                | 873           | 831           | 780           | 671           | 113           | 61            | 32                   |
| China.....                              | 418                | 790           | 1,242         | 553           | 955           | 1,740         | 133           | 491                  |
| Philippine Islands.....                 | 666                | 727           | 802           | 730           | 640           | 630           | 562           | 380                  |
| Central America.....                    | 613                | 697           | 752           | 684           | 658           | 596           | 503           | 471                  |
| Kwantung.....                           | 189                | 136           | 428           | 891           | 382           | 96            | 30            | 45                   |
| Venezuela.....                          | 175                | 201           | 248           | 295           | 254           | 242           | 166           | 186                  |
| Egypt.....                              | 337                | 173           | 220           | 205           | 185           | 163           | 131           | 135                  |
| Other countries.....                    | 1,456              | 1,310         | 1,776         | 1,502         | 1,034         | 638           | 449           | 393                  |
| Total.....                              | 13,385             | 12,821        | 12,888        | 12,994        | 11,726        | 8,357         | 4,324         | 3,873                |
| Hops:                                   | 1,000 pounds       | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds         |
| United Kingdom.....                     | 4,559              | 6,121         | 4,175         | 3,255         | 2,745         | 2,359         | 1,145         | 4,486                |
| Belgium.....                            | 1,892              | 255           | 129           | 93            | 77            | 37            | 41            | 247                  |
| Irish Free State.....                   | 702                | 583           | 974           | 613           | 795           | 799           | 855           | 1,596                |
| Other Europe.....                       | 2,225              | 759           | 59            | 40            | 111           | 10            | 0             | 156                  |
| Total Europe.....                       | 9,378              | 7,713         | 5,337         | 4,001         | 3,728         | 3,175         | 2,041         | 6,485                |
| Canada.....                             | 2,772              | 3,168         | 2,838         | 2,522         | 1,685         | 566           | 189           | 749                  |
| Other countries.....                    | 1,219              | 926           | 661           | 270           | 180           | 76            | 201           | 354                  |
| Total.....                              | 13,369             | 11,812        | 8,836         | 6,793         | 5,593         | 3,817         | 2,431         | 7,588                |
| Oil cake and oil-cake meal:             |                    |               |               |               |               |               |               |                      |
| Cottonseed cake: <sup>10</sup>          | tons               | tons          | tons          | tons          | tons          | tons          | tons          | tons                 |
| Denmark.....                            | 172,874            | 225,262       | 159,798       | 84,244        | 33,910        | 140,508       | 106,572       | 56,504               |
| Germany.....                            | 107,944            | 29,859        | 24,822        | 19,752        | 0             | 14,027        | 2,712         | 923                  |
| Other Europe.....                       | 11,945             | 8,806         | 12,895        | 1,686         | 11            | 6,826         | 846           | 834                  |
| Total Europe.....                       | 292,763            | 263,457       | 197,615       | 105,682       | 33,921        | 161,361       | 110,130       | 58,261               |
| Other countries.....                    | 6,961              | 55            | 14            | 101           | 1,459         | 89            | 50            | 67                   |
| Total.....                              | 299,724            | 263,512       | 197,629       | 105,783       | 35,380        | 161,450       | 110,180       | 58,328               |
| Cottonseed meal: <sup>10</sup>          |                    |               |               |               |               |               |               |                      |
| United Kingdom.....                     | 75,350             | 22,922        | 30,042        | 23,478        | 1,648         | 15,090        | 4,130         | 2,334                |
| Germany.....                            | 63,844             | 19,579        | 23,156        | 9,876         | 0             | 9,474         | 18,028        | 73                   |
| Norway.....                             | 14,373             | 5,828         | 5,096         | 510           | 56            | 10,528        | 5,012         | 616                  |
| Irish Free State.....                   | 9,319              | 2,806         | 4,854         | 7,152         | 0             | 6,398         | 2,800         | 2,940                |
| France.....                             | 344                | 247           | 2,024         | 1,148         | 560           | 700           | 728           | 338                  |
| Netherlands.....                        | 12,650             | 6,173         | 8,495         | 3,708         | 84            | 1,810         | 3,175         | 1,841                |
| Belgium.....                            | 4,202              | 2,180         | 3,946         | 1,630         | 506           | 1,607         | 8,170         | 1,381                |
| Other Europe.....                       | 228                | 3,644         | 3,757         | 1,572         | (?)           | 2,039         | 2             | 108                  |
| Total Europe.....                       | 180,310            | 63,379        | 81,370        | 49,074        | 2,854         | 47,646        | 37,045        | 9,631                |
| Canada.....                             | 11,089             | 4,843         | 6,478         | 13,174        | 4,272         | 4,888         | 2,214         | 4,506                |
| Other countries.....                    | 4,135              | 527           | 860           | 2,056         | 1,123         | 1,652         | 2,001         | 1,415                |
| Total.....                              | 195,534            | 68,749        | 88,708        | 64,304        | 8,249         | 53,686        | 41,260        | 15,552               |
| Linseed or flaxseed cake: <sup>10</sup> |                    |               |               |               |               |               |               |                      |
| Netherlands.....                        | 190,552            | 152,660       | 135,693       | 161,768       | 70,752        | 103,094       | 57,381        | 136,287              |
| Belgium.....                            | 85,744             | 117,942       | 102,102       | 92,494        | 44,924        | 69,818        | 50,254        | 107,163              |
| United Kingdom.....                     | 22,761             | 19,349        | 20,196        | 24,373        | 21,248        | 10,864        | 1,129         | 16,137               |
| Other Europe.....                       | 5,640              | 4,576         | 4,652         | 21,058        | 7,654         | 27,378        | 4,316         | 2,957                |
| Total Europe.....                       | 304,697            | 294,527       | 312,043       | 299,693       | 144,578       | 211,154       | 113,080       | 262,544              |
| Other countries.....                    | 63                 | 60            | 414           | 1,217         | 295           | 517           | 207           | 1,817                |
| Total.....                              | 304,760            | 294,587       | 312,457       | 300,910       | 144,873       | 211,671       | 113,287       | 264,361              |

<sup>1</sup> Preliminary.<sup>2</sup> Less than 500.<sup>3</sup> Excludes Bermuda.<sup>10</sup> Tons of 2,000 pounds each.

TABLE 449.—*Exports (domestic) of principal agricultural products from the United States, by countries, 1926-27 to 1933-34—Continued*

| Article and country to which exported | Year ended June 30  |                     |                     |                     |                     |                     |                     |                      |
|---------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
|                                       | 1926-27             | 1927-28             | 1928-29             | 1929-30             | 1930-31             | 1931-32             | 1932-33             | 1933-34 <sup>1</sup> |
| <b>VEGETABLE PRODUCTS—continued</b>   |                     |                     |                     |                     |                     |                     |                     |                      |
| Cottonseed oil:                       | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i>  |
| Canada.....                           | 37,683              | 49,407              | 20,550              | 24,666              | 9,152               | 28,572              | 29,634              | 10,988               |
| Mexico.....                           | 3,868               | 5,318               | 2,374               | 947                 | 3,054               | 450                 | 2,062               | 563                  |
| Cuba.....                             | 2,770               | 2,033               | 1,836               | 2,448               | 9,855               | 7,797               | 5,338               | 7,112                |
| Argentina.....                        | 2,160               | 1,103               | 912                 | 253                 | 94                  | 3                   | 22                  | 0                    |
| Japan.....                            | 925                 | 831                 | 911                 | 1,179               | 1,146               | 1,602               | 3,543               | 2,261                |
| Panama.....                           | 742                 | 719                 | 738                 | 1,063               | 768                 | 900                 | 1,007               | 801                  |
| Other countries.....                  | 9,432               | 2,054               | 2,160               | 1,442               | 1,384               | 1,661               | 2,771               | 1,464                |
| Total.....                            | 57,580              | 61,470              | 29,531              | 31,998              | 26,353              | 40,985              | 44,427              | 23,189               |
| Timothy seed:                         |                     |                     |                     |                     |                     |                     |                     |                      |
| United Kingdom.....                   | 2,774               | 2,928               | 668                 | 1,841               | 2,054               | 2,428               | 1,365               | 1,356                |
| Germany.....                          | 2,336               | 2,942               | 352                 | 226                 | 391                 | 433                 | 179                 | 0                    |
| Denmark.....                          | 726                 | 1,425               | 394                 | 259                 | 147                 | 331                 | 39                  | 0                    |
| France.....                           | 329                 | 202                 | 63                  | 29                  | 1                   | 235                 | 8                   | 1                    |
| Netherlands.....                      | 272                 | 217                 | 84                  | 97                  | 45                  | 166                 | 83                  | 34                   |
| Belgium.....                          | 117                 | 137                 | 22                  | 18                  | 22                  | 130                 | 0                   | 0                    |
| Other Europe.....                     | 175                 | 454                 | 306                 | 445                 | 67                  | 54                  | 136                 | 11                   |
| Total Europe.....                     | 6,729               | 8,305               | 1,889               | 2,915               | 2,727               | 3,827               | 1,810               | 1,402                |
| Canada.....                           | 7,111               | 8,833               | 6,502               | 8,868               | 10,637              | 9,768               | 3,354               | 3,709                |
| New Zealand.....                      | 187                 | 440                 | 194                 | 252                 | 171                 | 277                 | 263                 | 210                  |
| Other countries.....                  | 33                  | 95                  | 51                  | 76                  | 60                  | 76                  | 54                  | 58                   |
| Total.....                            | 14,060              | 17,678              | 8,636               | 12,111              | 13,595              | 13,948              | 5,481               | 5,379                |
| Sugar, refined: <sup>10</sup>         | <i>Tons</i>         | <i>Tons</i>         | <i>Tons</i>         | <i>Tons</i>         | <i>Tons</i>         | <i>Tons</i>         | <i>Tons</i>         | <i>Tons</i>          |
| United Kingdom.....                   | 37,069              | 35,460              | 23,507              | 25,224              | 23,111              | 23,613              | 21,480              | 30,210               |
| Norway.....                           | 14,912              | 12,579              | 14,389              | 5,733               | 1,735               | 2,612               | 3,072               | 4,055                |
| France.....                           | 4,523               | 1,050               | 1,526               | 1,347               | 1,636               | 569                 | 586                 | 535                  |
| Netherlands.....                      | 2,772               | 4,338               | 4,839               | 5,435               | 4,689               | 4,341               | 4,616               | 4,448                |
| Denmark.....                          | 206                 | 192                 | 829                 | 1,013               | 1,445               | 1,366               | 325                 | 445                  |
| Belgium.....                          | ( <sup>11</sup> )   | 421                 | 493                 | 491                 | 686                 | 610                 | 798                 | 666                  |
| Other Europe.....                     | 7,200               | 6,567               | 780                 | 435                 | 355                 | 767                 | 1,634               | 2,604                |
| Total.....                            | 66,682              | 60,607              | 46,863              | 39,678              | 33,687              | 33,878              | 32,511              | 42,053               |
| Uruguay.....                          | 18,748              | 12,692              | 25,647              | 5,966               | 6,643               | 2,590               | 89                  | 2,911                |
| West Indies and Bermudas.....         | 3,970               | 4,816               | 5,587               | 4,962               | 5,331               | 3,644               | 2,089               | 2,391                |
| British Africa.....                   | 5,565               | 4,921               | 12,147              | 6,474               | 6,110               | 3,798               | 473                 | 794                  |
| Canada.....                           | 1,892               | 3,711               | 6,501               | 3,637               | 2,295               | 1,222               | 592                 | 1,147                |
| Mexico.....                           | 3,898               | 1,703               | 4,818               | 4,324               | 747                 | 236                 | 244                 | 224                  |
| Panama.....                           | 2,089               | 2,000               | 2,439               | 3,146               | 3,958               | 5,041               | 3,234               | 3,548                |
| Newfoundland and Labrador.....        | 509                 | 620                 | 2,342               | 6,107               | 2,331               | 1,501               | 455                 | 3,179                |
| Colombia.....                         | 1,962               | 6,812               | 13,396              | 6,107               | 4,740               | 292                 | 84                  | 75                   |
| New Zealand.....                      | 0                   | 2                   | 4                   | 1,080               | 1,428               | 225                 | ( <sup>11</sup> )   | 262                  |
| Philippine Islands.....               | 234                 | 251                 | 744                 | 755                 | 874                 | 513                 | 272                 | 124                  |
| Chile.....                            | 2,043               | 1,876               | 2,368               | 627                 | 278                 | 94                  | 1                   | 146                  |
| Other countries.....                  | 6,692               | 5,545               | 5,521               | 1,565               | 1,796               | 1,044               | 653                 | 1,979                |
| Total.....                            | 114,084             | 105,556             | 127,877             | 78,622              | 70,218              | 54,073              | 40,712              | 59,733               |
| Tobacco, leaf:                        | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i>  |
| Flue-cured:                           |                     |                     |                     |                     |                     |                     |                     |                      |
| United Kingdom.....                   | 134,886             | 157,506             | 171,515             | 136,583             | 184,448             | 129,399             | 131,807             | 170,507              |
| Germany.....                          | 11,105              | 13,378              | 13,841              | 8,150               | 12,274              | 7,610               | 4,052               | 7,838                |
| Netherlands.....                      | 6,941               | 8,367               | 9,392               | 7,267               | 7,624               | 9,688               | 4,812               | 11,548               |
| Belgium.....                          | 1,037               | 2,758               | 3,927               | 2,190               | 3,589               | 3,229               | 3,679               | 3,209                |
| Other Europe.....                     | 9,775               | 10,072              | 11,878              | 30,475              | 16,959              | 12,205              | 8,872               | 12,274               |
| Total Europe.....                     | 163,744             | 192,081             | 210,558             | 234,665             | 224,894             | 162,131             | 152,222             | 205,376              |
| China <sup>12</sup> .....             | 71,760              | 68,842              | 131,264             | 128,144             | 143,989             | 77,433              | 76,607              | 87,029               |
| Australia.....                        | 19,307              | 21,488              | 18,146              | 19,492              | 28,173              | 11,007              | 8,693               | 10,541               |
| Canada.....                           | 11,984              | 14,049              | 14,601              | 13,660              | 11,210              | 10,680              | 7,487               | 7,949                |
| Japan.....                            | 8,553               | 11,555              | 14,564              | 10,395              | 11,604              | 4,128               | 4,735               | 7,753                |
| British India.....                    | 4,538               | 5,031               | 5,884               | 3,874               | 1,162               | 3,721               | 3,293               | 2,236                |
| Other countries.....                  | 8,785               | 15,878              | 18,947              | 19,712              | 16,656              | 16,388              | 16,625              | 9,128                |
| Total.....                            | 288,671             | 328,924             | 413,949             | 429,942             | 432,688             | 285,488             | 269,662             | 330,312              |

<sup>1</sup> Preliminary.<sup>10</sup> Tons of 2,000 pounds each.<sup>11</sup> Less than  $\frac{1}{4}$  ton.<sup>12</sup> Includes Hong Kong and Kwantung.

TABLE 449.—*Exports (domestic) of principal agricultural products from the United States, by countries, 1926-27 to 1933-34—Continued*

| Article and country to which exported           | Year ended June 30 |                 |                 |                 |                 |                 |                 |                      |
|---|--------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------------|
|   | 1926-27            | 1927-28         | 1928-29         | 1929-30         | 1930-31         | 1931-32         | 1932-33         | 1933-34 <sup>1</sup> |
| <b>VEGETABLE PRODUCTS—continued.</b>            |                    |                 |                 |                 |                 |                 |                 |                      |
| <b>Tobacco, leaf—Continued:</b>                 |                    |                 |                 |                 |                 |                 |                 |                      |
| Burley:   | 1,000<br>pounds    | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds      |
| Belgium   | 6,086              | 2,151           | 2,245           | 3,362           | 3,085           | 3,842           | 4,319           | 3,819                |
| Germany   | 1,053              | 885             | 152             | 169             | 442             | 530             | 488             | 540                  |
| Italy   | 224                | 445             | 6               | 20              | 373             | 496             | 285             | 465                  |
| Netherlands                                     | 2,978              | 511             | 143             | 168             | 232             | 1,067           | 694             | 2,218                |
| Portugal  | 2,130              | 1,886           | 1,539           | 2,969           | 1,363           | 1,262           | 1,612           | 2,242                |
| Sweden  | 50                 | 0               | 5               | 193             | 0               | 61              | 88              | 406                  |
| United Kingdom                                  | 351                | 862             | 118             | 391             | 776             | 320             | 66              | 230                  |
| Other Europe                                    | 630                | 517             | 286             | 333             | 843             | 966             | 1,262           | 1,208                |
| Total Europe                                    | 13,502             | 7,357           | 4,494           | 7,595           | 7,114           | 8,544           | 8,814           | 11,128               |
| Newfoundland and Labrador                       | 138                | 297             | 306             | 326             | 185             | 203             | 115             | 327                  |
| Australia                                       | 42                 | 230             | 609             | 510             | 246             | 268             | 388             | 271                  |
| Argentina                                       | 0                  | 8               | 6               | 4               | 45              | 67              | 28              | 154                  |
| Other countries                                 | 3,427              | 1,125           | 821             | 819             | 887             | 833             | 708             | 680                  |
| Total   | 17,109             | 9,017           | 6,236           | 9,254           | 8,477           | 9,915           | 10,053          | 12,560               |
| <b>Black fat, waterbaler, and dark African:</b> |                    |                 |                 |                 |                 |                 |                 |                      |
| British West Africa                             | 7 102              | 343             | 1,321           | 3,740           | 2,634           | 6,044           | 4,380           | 4,249                |
| French Africa                                   | 7 69               | 119             | 1,409           | 1,993           | 2,611           | 2,720           | 2,099           | 2,118                |
| Portuguese Africa                               | 7 3                | 3               | 55              | 90              | 172             | 545             | 358             | 476                  |
| Spanish Africa                                  | 7 8                | 44              | 95              | 222             | 152             | 284             | 209             | 360                  |
| Germany   | 7 0                | 4               | 118             | 272             | 80              | 124             | 301             | 465                  |
| Other countries                                 | 7 72               | 391             | 633             | 907             | 2,007           | 747             | 810             | 1,053                |
| Total   | 7 254              | 904             | 3,631           | 7,224           | 7,556           | 10,464          | 8,227           | 8,721                |
| <b>Dark-fred Kentucky and Tennessee:</b>        |                    |                 |                 |                 |                 |                 |                 |                      |
| France  | 23,078             | 14,516          | 15,608          | 37,129          | 18,844          | 28,148          | 24,456          | 20,838               |
| Spain   | 19,365             | 11,275          | 4,110           | 2,448           | 2,011           | 5,791           | 4,155           | 17,630               |
| Belgium   | 19,894             | 7,383           | 5,894           | 4,673           | 8,028           | 9,102           | 8,815           | 11,004               |
| United Kingdom                                  | 11,919             | 8,999           | 6,861           | 6,906           | 5,291           | 5,621           | 4,514           | 2,254                |
| Germany   | 13,937             | 8,568           | 10,353          | 8,329           | 9,677           | 7,602           | 7,353           | 6,078                |
| Netherlands                                     | 13,541             | 9,246           | 9,671           | 11,907          | 12,821          | 5,074           | 2,434           | 2,902                |
| Poland and Danzig                               | 1,866              | 3,041           | 3,004           | 4,509           | 3,347           | 2,330           | 2,187           | 709                  |
| Switzerland                                     | 2,969              | 931             | 1,800           | 1,367           | 2,551           | 1,468           | 1,205           | 3,300                |
| Argentina                                       | 3,178              | 2,197           | 2,676           | 2,180           | 2,847           | 2,123           | 1,017           | 563                  |
| British West Africa                             | 4,794              | 5,451           | 4,757           | 3,029           | 886             | 204             | 96              | 67                   |
| French Africa                                   | 4,041              | 4,363           | 2,554           | 3,254           | 1,865           | 1,228           | 685             | 841                  |
| Mexico  | 1,315              | 537             | 823             | 508             | 837             | 54              | 21              | 25                   |
| Other countries                                 | 14,585             | 10,645          | 11,493          | 10,210          | 14,100          | 11,451          | 6,714           | 10,151               |
| Total   | 184,498            | 87,172          | 79,304          | 96,387          | 82,306          | 80,191          | 63,652          | 75,857               |
| <b>Dark Virginia:</b>                           |                    |                 |                 |                 |                 |                 |                 |                      |
| France  | 1,627              | 1,241           | 1,688           | 651             | 150             | 0               | 0               | 0                    |
| Germany   | 3,842              | 3,045           | 2,560           | 2,156           | 3,277           | 1,783           | 2,184           | 1,101                |
| Netherlands                                     | 2,382              | 1,976           | 1,206           | 1,242           | 780             | 1,887           | 1,572           | 1,783                |
| Norway  | 2,150              | 1,742           | 2,679           | 1,358           | 1,824           | 1,578           | 1,559           | 1,556                |
| Portugal  | 1,030              | 760             | 769             | 523             | 277             | 239             | 89              | 559                  |
| United Kingdom                                  | 1,521              | 1,399           | 1,752           | 2,797           | 1,068           | 2,284           | 609             | 1,156                |
| Belgium   | 740                | 1,195           | 2,276           | 402             | 679             | 1,687           | 1,301           | 1,108                |
| Other Europe                                    | 668                | 5,453           | 6,910           | 5,103           | 2,695           | 1,993           | 3,344           | 3,400                |
| Total Europe                                    | 13,960             | 17,411          | 19,850          | 14,232          | 10,760          | 11,449          | 10,638          | 10,403               |
| Canada  | 152                | 226             | 284             | 210             | 240             | 3               | 109             | 23                   |
| China <sup>11</sup>                             | 1,733              | 111             | 110             | 179             | 107             | 0               | 0               | 20                   |
| Australia                                       | 2,422              | 1,660           | 721             | 1,642           | 1,020           | 488             | 366             | 374                  |
| British West Africa                             | 266                | 344             | 422             | 572             | 123             | 19              | 31              | 146                  |
| Other countries                                 | 1,492              | 1,067           | 1,484           | 1,842           | 1,106           | 1,100           | 1,380           | 1,406                |
| Total   | 20,025             | 20,819          | 22,871          | 18,677          | 13,349          | 13,091          | 12,524          | 12,372               |
| <b>Maryland and Ohio export:</b>                |                    |                 |                 |                 |                 |                 |                 |                      |
| Netherlands                                     | 4,239              | 6,103           | 2,052           | 1,157           | 797             | 665             | 2,916           | 3,973                |
| France  | 7,237              | 4,269           | 6,545           | 2,372           | 4,917           | 3,244           | 3,074           | 1,755                |
| Belgium   | 704                | 890             | 819             | 725             | 1,003           | 837             | 1,263           | 1,278                |
| Switzerland                                     | 1,107              | 1,179           | 1,995           | 1,585           | 1,707           | 1,841           | 1,510           | 2,023                |
| Germany   | 653                | 870             | 321             | 434             | 209             | 95              | 236             | 624                  |
| Other Europe                                    | 1,416              | 1,348           | 396             | 491             | 1,066           | 461             | 591             | 430                  |
| Total Europe                                    | 15,356             | 14,659          | 11,928          | 6,814           | 9,699           | 7,143           | 9,590           | 10,083               |
| Other countries                                 | 1,029              | 496             | 773             | 1,173           | 614             | 187             | 400             | 441                  |
| Total   | 16,385             | 15,155          | 12,701          | 7,987           | 10,313          | 7,330           | 9,990           | 10,524               |

<sup>1</sup> Preliminary.<sup>7</sup> Six months, January-June.<sup>11</sup> Includes Hong Kong and Kwantung.

Bureau of Agricultural Economics, Foreign Agricultural Service Division. Compiled from Monthly Summary of Foreign Commerce of the United States, January and June issues, 1927-32, and official records of the Bureau of Foreign and Domestic Commerce.

TABLE 450.—Imports (general) of principal agricultural products into the United States, by countries, 1926-27 to 1933-34

| Article and country from which imported                 | Year ended June 30 |              |               |               |              |              |              |                      |
|---|--------------------|--------------|---------------|---------------|--------------|--------------|--------------|----------------------|
|   | 1926-27            | 1927-28      | 1928-29       | 1929-30       | 1930-31      | 1931-32      | 1932-33      | 1933-34 <sup>1</sup> |
| <b>ANIMALS AND ANIMAL PRODUCTS</b>                      |                    |              |               |               |              |              |              |                      |
| <b>Cattle:</b>  | <i>Thou-</i>       | <i>Thou-</i> | <i>Thou-</i>  | <i>Thou-</i>  | <i>Thou-</i> | <i>Thou-</i> | <i>Thou-</i> | <i>Thou-</i>         |
| Mexico.....   | sands 99           | sands 204    | sands 309     | sands 228     | sands 56     | sands 79     | sands 92     | sands 61             |
| Canada.....   | 168                | 343          | 256           | 192           | 26           | 24           | 8            | 6                    |
| Virgin Islands.....                                     | 1                  | 1            | 1             | 2             | 3            | 3            | 2            | 2                    |
| Other countries.....                                    | 0                  | 1            | 1             | 1             | 1            | (?)          | (?)          | (?)                  |
| Total.....  | 268                | 549          | 567           | 421           | 86           | 106          | 102          | 69                   |
| <b>Butter:</b>  | <i>1,000</i>       | <i>1,000</i> | <i>1,000</i>  | <i>1,000</i>  | <i>1,000</i> | <i>1,000</i> | <i>1,000</i> | <i>1,000</i>         |
| United Kingdom.....                                     | pounds 3,932       | pounds 870   | pounds 58     | pounds 171    | pounds 17    | pounds 38    | pounds 129   | pounds 60            |
| Denmark.....  | 1,529              | 761          | 902           | 1,109         | 172          | 210          | 124          | 193                  |
| Other Europe.....                                       | 192                | 453          | 279           | 38            | 26           | 34           | 106          | 121                  |
| Total Europe.....                                       | 5,653              | 2,084        | 1,239         | 1,318         | 215          | 282          | 359          | 374                  |
| New Zealand.....  | 3,682              | 2,396        | 1,674         | 1,141         | 877          | 729          | 547          | 330                  |
| Canada.....   | 610                | 275          | 237           | 142           | 162          | 709          | 64           | 47                   |
| Other countries.....                                    | 765                | 200          | 149           | 250           | 75           | 118          | 21           | 12                   |
| Total.....  | 10,710             | 4,955        | 3,299         | 2,851         | 1,329        | 1,838        | 991          | 763                  |
| <b>Cheese, Emmenthaler (Swiss):<sup>3</sup></b>         |                    |              |               |               |              |              |              |                      |
| Switzerland.....  |                    |              |               | 4,934         | 13,571       | 11,211       | 10,492       | 6,005                |
| Denmark.....  |                    |              |               | 440           | 594          | 661          | 518          | 566                  |
| Germany.....  |                    |              |               | 448           | 497          | 813          | 420          | 204                  |
| Other countries.....                                    |                    |              |               | 120           | 1,110        | 883          | 874          | 1,212                |
| Total.....  |                    |              |               | 4,142         | 15,772       | 13,568       | 12,304       | 7,987                |
| <b>Cheese, other than Swiss:<sup>4</sup></b>            |                    |              |               |               |              |              |              |                      |
| Italy.....  | 36,572             | 31,332       | 33,337        | 36,858        | 29,307       | 30,296       | 30,398       | 26,083               |
| France.....   | 4,923              | 5,874        | 6,243         | 6,035         | 8,860        | 4,333        | 3,775        | 3,079                |
| Netherlands.....  | 3,687              | 3,736        | 3,525         | 2,915         | 2,334        | 2,435        | 2,177        | 1,709                |
| Switzerland.....  | 20,638             | 16,449       | 19,731        | 16,452        | 3,607        | 1,463        | 1,516        | 1,236                |
| Other Europe.....                                       | 6,634              | 5,933        | 6,052         | 8,469         | 1,994        | 3,145        | 3,936        | 4,618                |
| Total Europe.....                                       | 72,454             | 63,374       | 73,858        | 70,829        | 41,102       | 41,672       | 41,802       | 36,725               |
| Canada.....   | 16,609             | 11,439       | 9,381         | 5,895         | 818          | 1,366        | 1,109        | 1,165                |
| Other countries.....                                    | 719                | 611          | 1,337         | 396           | 280          | 629          | 708          | 1,027                |
| Total.....  | 89,782             | 75,424       | 84,606        | 77,120        | 42,200       | 43,667       | 43,619       | 38,917               |
| <b>Eggs in the shell:</b>                               | <i>1,000</i>       | <i>1,000</i> | <i>1,000</i>  | <i>1,000</i>  | <i>1,000</i> | <i>1,000</i> | <i>1,000</i> | <i>1,000</i>         |
| Hong Kong.....  | dozen 219          | dozen 199    | dozen 236     | dozen 250     | dozen 263    | dozen 248    | dozen 206    | dozen 171            |
| China.....  | 6                  | 40           | 28            | 15            | 19           | 20           | 14           | 13                   |
| Canada.....   | 54                 | 13           | 13            | 60            | 15           | 13           | 6            | 5                    |
| Other countries.....                                    | 17                 | 4            | 14            | 12            | 4            | 1            | 36           | 9                    |
| Total.....  | 296                | 256          | 291           | 337           | 301          | 282          | 262          | 198                  |
| <b>Eggs and egg yolks, dried, frozen and preserved:</b> | <i>1,000</i>       | <i>1,000</i> | <i>1,000</i>  | <i>1,000</i>  | <i>1,000</i> | <i>1,000</i> | <i>1,000</i> | <i>1,000</i>         |
| China.....  | pounds 14,825      | pounds 5,409 | pounds 20,582 | pounds 18,206 | pounds 7,918 | pounds 2,745 | pounds 2,016 | pounds 2,204         |
| United Kingdom.....                                     | 3,357              | 248          | 3,285         | 4,493         | 76           | 84           | 0            | 0                    |
| Other countries.....                                    | 133                | 244          | 593           | 253           | 62           | 79           | 1            | 2                    |
| Total.....  | 18,315             | 5,901        | 24,460        | 22,957        | 8,056        | 2,908        | 2,017        | 2,206                |
| <b>Egg albumen:</b>                                     |                    |              |               |               |              |              |              |                      |
| China.....  | 6,907              | 2,836        | 3,431         | 4,868         | 2,208        | 1,654        | 1,424        | 355                  |
| Other countries.....                                    | 919                | 78           | 77            | 450           | 13           | 68           | (?)          | 6                    |
| Total.....  | 7,826              | 2,914        | 3,508         | 5,318         | 2,221        | 1,722        | 1,424        | 361                  |

<sup>1</sup> Preliminary. Imports for consumption.<sup>2</sup> Less than 500.<sup>3</sup> Included with "cheese, other than Swiss" prior to June 13, 1930.<sup>4</sup> June 18 to June 30.<sup>5</sup> Includes "Swiss cheese" prior to June 18, 1930.

TABLE 450.—Imports (general) of principal agricultural products into the United States, by countries, 1926-27 to 1933-34—Continued

| Article and country from which imported           | Year ended June 30  |                     |                     |                     |                     |                     |                     |                      |
|---|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
|   | 1926-27             | 1927-28             | 1928-29             | 1929-30             | 1930-31             | 1931-32             | 1932-33             | 1933-34 <sup>1</sup> |
| <b>ANIMALS AND ANIMAL PRODUCTS—continued</b>      |                     |                     |                     |                     |                     |                     |                     |                      |
| <b>Meats canned:</b>                              | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i>  |
| Uruguay.....                                      | 14,438              | 16,903              | 31,262              | 36,442              | 8,893               | 11,872              | 16,430              | 20,728               |
| Argentina.....                                    | 17,425              | 18,718              | 40,870              | 42,640              | 9,013               | 7,448               | 12,326              | 17,726               |
| Paraguay.....                                     | 378                 | 2,352               | 3,400               | 2,274               | 1,401               | 399                 | 1,588               | 1,021                |
| Japan.....  | 95                  | 421                 | 165                 | 158                 | 78                  | 95                  | 91                  | 57                   |
| Other countries.....                              | 1,183               | 1,980               | 2,086               | 1,124               | 429                 | 382                 | 187                 | 119                  |
| Total.....  | 33,519              | 40,354              | 77,783              | 82,638              | 19,814              | 20,196              | 30,602              | 39,649               |
| <b>Silk, raw, in skeins reeled from cocoon:</b>   |                     |                     |                     |                     |                     |                     |                     |                      |
| Japan.....  | 59,934              | 64,673              | 63,415              | 61,243              | 67,309              | 69,423              | 67,098              | 58,806               |
| China.....  | 11,872              | 9,816               | 12,326              | 12,717              | 10,432              | 5,258               | 3,072               | 3,087                |
| Other countries.....                              | 1,596               | 1,269               | 1,455               | 3,733               | 4,038               | 3,108               | 3,254               | 1,416                |
| Total.....  | 73,402              | 75,758              | 77,196              | 77,693              | 81,779              | 77,849              | 73,424              | 63,309               |
| <b>Wool, unmanufactured:</b>                      |                     |                     |                     |                     |                     |                     |                     |                      |
| <b>Carpet wool:</b>                               |                     |                     |                     |                     |                     |                     |                     |                      |
| United Kingdom.....                               | 51,602              | 32,423              | 33,861              | 23,326              | 14,085              | 9,159               | 9,435               | 16,806               |
| China.....  | 36,362              | 55,998              | 53,589              | 36,991              | 33,608              | 18,720              | 7,773               | 44,800               |
| Argentina.....                                    | 9,513               | 8,924               | 19,820              | 24,405              | 25,567              | 20,428              | 11,827              | 34,039               |
| British India.....                                | 6,906               | 10,811              | 14,390              | 11,106              | 5,163               | 9,430               | 4,309               | 14,942               |
| Palestine and Syria.....                          | 8,064               | 8,420               | 3,953               | 10,460              | 4,588               | 3,970               | 1,186               | 2,155                |
| Iraq.....   | 4,115               | 6,550               | 6,349               | 7,451               | 4,210               | 6,037               | 1,685               | 3,077                |
| Egypt.....  | 1,650               | 2,191               | 3,765               | 3,714               | 2,351               | 2,022               | 1,769               | 3,662                |
| Italy.....  | 4,532               | 4,056               | 3,668               | 3,053               | 2,772               | 2,027               | 1,812               | 3,766                |
| Irish Free State.....                             | 1,729               | 1,580               | 2,134               | 2,126               | 490                 | 1,427               | 1,354               | 2,221                |
| Germany.....                                      | 2,876               | 2,814               | 3,260               | 3,250               | 2,622               | 1,828               | 1,299               | 3,680                |
| France.....                                       | 5,371               | 5,414               | 4,470               | 4,260               | 1,814               | 1,078               | 401                 | 1,486                |
| Switzerland.....                                  | 2,132               | 1,515               | 1,509               | 1,506               | 1,173               | 1,002               | 55                  | 76                   |
| Other countries.....                              | 9,846               | 4,793               | 13,945              | 9,493               | 5,023               | 3,731               | 1,614               | 4,289                |
| Total.....  | 144,698             | 145,489             | 164,713             | 141,111             | 103,261             | 81,459              | 44,019              | 134,979              |
| <b>Clothing wool:</b>                             |                     |                     |                     |                     |                     |                     |                     |                      |
| United Kingdom.....                               | 4,775               | 4,169               | 2,499               | 1,807               | 1,800               | 1,084               | 516                 | 2,308                |
| Australia.....                                    | 3,797               | 5,515               | 5,036               | 5,690               | 2,871               | 3,489               | 285                 | 2,579                |
| Canada.....                                       | 2,353               | 2,838               | 1,601               | 1,129               | 812                 | 75                  | 25                  | 653                  |
| Argentina.....                                    | 2,843               | 2,545               | 1,872               | 2,300               | 354                 | 96                  | 3                   | 259                  |
| Chile.....  | 1,186               | 1,677               | 1,625               | 1,094               | 361                 | 1                   | 0                   | 306                  |
| New Zealand.....                                  | 662                 | 1,670               | 2,061               | 3,514               | 366                 | 1,411               | 46                  | 582                  |
| Uruguay.....                                      | 497                 | 213                 | 1,062               | 1,275               | 143                 | 23                  | 0                   | 44                   |
| Other countries.....                              | 657                 | 747                 | 1,732               | 2,047               | 352                 | 1,032               | 149                 | 589                  |
| Total.....  | 16,770              | 19,374              | 18,408              | 18,856              | 6,559               | 7,211               | 1,024               | 7,320                |
| <b>Combing wool:</b>                              |                     |                     |                     |                     |                     |                     |                     |                      |
| United Kingdom.....                               | 15,484              | 17,344              | 12,319              | 8,784               | 2,933               | 2,114               | 2,423               | 6,433                |
| Australia.....                                    | 38,714              | 21,992              | 17,906              | 14,911              | 22,018              | 9,636               | 2,243               | 9,282                |
| Argentina.....                                    | 15,265              | 11,424              | 12,875              | 10,674              | 1,998               | 193                 | ( <sup>2</sup> )    | 3,319                |
| Uruguay.....                                      | 17,751              | 9,962               | 20,341              | 11,815              | 4,553               | 583                 | 282                 | 3,846                |
| New Zealand.....                                  | 5,192               | 8,260               | 8,577               | 3,093               | 2,065               | 413                 | 851                 | 3,427                |
| Union of South Africa.....                        | 4,488               | 4,566               | 2,913               | 925                 | 2,715               | 1,172               | 149                 | 899                  |
| Canada.....                                       | 3,599               | 6,122               | 5,314               | 5,057               | 396                 | 926                 | 677                 | 5,253                |
| Other countries.....                              | 2,415               | 3,612               | 3,233               | 3,215               | 2,150               | 93                  | 43                  | 527                  |
| Total.....  | 102,908             | 80,282              | 83,478              | 58,474              | 38,728              | 15,130              | 6,668               | 32,986               |
| <b>Hair of the Angora goat (mohair), alpacas:</b> |                     |                     |                     |                     |                     |                     |                     |                      |
| United Kingdom.....                               | 792                 | 541                 | 384                 | 391                 | 350                 | 50                  | 318                 | 221                  |
| Turkey (Europe and Asia).....                     | 3,237               | 963                 | 2,034               | 553                 | 9                   | 0                   | 0                   | 732                  |
| British South Africa.....                         | 2,505               | 660                 | 884                 | 370                 | 407                 | 0                   | 98                  | 347                  |
| Peru.....   | 82                  | 425                 | 716                 | 622                 | 149                 | 50                  | 147                 | 302                  |
| China.....  | 74                  | 184                 | 145                 | 48                  | 26                  | 27                  | 0                   | 3                    |
| Other countries.....                              | 62                  | 97                  | 175                 | 52                  | 58                  | 14                  | 30                  | 96                   |
| Total.....  | 6,752               | 2,890               | 4,338               | 2,036               | 999                 | 141                 | 593                 | 1,701                |

<sup>1</sup> Preliminary. Imports for consumption.<sup>2</sup> Less than 500.

TABLE 450.—Imports (general) of principal agricultural products into the United States, by countries, 1926-27 to 1933-34—Continued

| Article and country from which imported      | Year ended June 30  |                     |                     |                     |                     |                     |                     |                      |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
|  | 1926-27             | 1927-28             | 1928-29             | 1929-30             | 1930-31             | 1931-32             | 1932-33             | 1933-34 <sup>1</sup> |
| <b>ANIMALS AND ANIMAL PRODUCTS—continued</b> |                     |                     |                     |                     |                     |                     |                     |                      |
| Sausage casings:                             | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i>  |
| Germany.....                                 | 1,904               | 1,353               | 2,599               | 1,813               | 763                 | 850                 | 582                 | 418                  |
| Argentina.....                               | 4,804               | 4,975               | 5,719               | 5,459               | 3,897               | 3,373               | 3,648               | 4,975                |
| Canada.....                                  | 3,351               | 3,928               | 2,989               | 2,218               | 1,808               | 2,199               | 1,958               | 1,837                |
| Australia.....                               | 2,198               | 2,213               | 2,597               | 3,024               | 1,638               | 1,457               | 1,286               | 1,456                |
| China.....                                   | 2,074               | 1,640               | 1,445               | 1,256               | 918                 | 655                 | 463                 | 713                  |
| New Zealand.....                             | 901                 | 1,223               | 1,086               | 1,470               | 798                 | 1,087               | 1,250               | 2,242                |
| Uruguay.....                                 | 876                 | 917                 | 1,317               | 1,527               | 736                 | 497                 | 664                 | 963                  |
| Chile.....                                   | 454                 | 260                 | 859                 | 648                 | 404                 | 522                 | 386                 | 528                  |
| U. S. S. R. (Russia in Europe).....          | 633                 | 665                 | 951                 | 1,300               | 496                 | 500                 | 650                 | 341                  |
| Turkey (Asia and Europe).....                | 213                 | 235                 | 268                 | 224                 | 353                 | 251                 | 295                 | 445                  |
| Other countries.....                         | 1,436               | 2,136               | 2,210               | 2,617               | 1,544               | 1,835               | 1,725               | 2,135                |
| Total.....                                   | 18,844              | 19,545              | 22,040              | 21,566              | 13,355              | 13,226              | 12,887              | 16,053               |
| <b>VEGETABLE PRODUCTS</b>                    |                     |                     |                     |                     |                     |                     |                     |                      |
| Cocoa or cacao beans:                        |                     |                     |                     |                     |                     |                     |                     |                      |
| British West Africa.....                     | 164,338             | 133,963             | 145,739             | 145,400             | 151,524             | 131,720             | 167,660             | 191,223              |
| Brazil.....                                  | 81,148              | 100,262             | 87,338              | 95,516              | 75,726              | 142,264             | 173,894             | 130,536              |
| Dominican Republic.....                      | 51,084              | 39,591              | 50,353              | 41,120              | 37,898              | 54,412              | 38,244              | 49,239               |
| British West Indies and Bermudas.....        | 31,247              | 38,217              | 41,933              | 39,276              | 41,805              | 21,240              | 27,084              | 14,640               |
| Venezuela.....                               | 13,207              | 14,482              | 18,008              | 19,302              | 17,338              | 13,936              | 23,451              | 18,794               |
| Germany.....                                 | 15,797              | 29,074              | 17,424              | 8,565               | 11,506              | 8,347               | 725                 | 718                  |
| United Kingdom.....                          | 15,644              | 9,234               | 10,612              | 12,790              | 16,429              | 12,103              | 1,645               | 1,917                |
| Netherlands.....                             | 13,133              | 11,502              | 6,074               | 5,528               | 9,990               | 4,289               | 125                 | 861                  |
| Ecuador.....                                 | 13,710              | 19,210              | 16,939              | 14,754              | 13,170              | 11,920              | 9,586               | 11,399               |
| French Africa.....                           | 220                 | 0                   | 44                  | 8,741               | 12,308              | 7,282               | 10,518              | 21,484               |
| Panama.....                                  | 4,899               | 3,861               | 9,148               | 7,693               | 10,080              | 13,451              | 10,769              | 11,046               |
| Other countries.....                         | 20,757              | 12,147              | 14,631              | 23,253              | 17,668              | 13,869              | 12,720              | 14,174               |
| Total.....                                   | 425,184             | 411,543             | 419,243             | 421,938             | 415,442             | 434,853             | 476,421             | 465,831              |
| Coffee:                                      |                     |                     |                     |                     |                     |                     |                     |                      |
| Brazil.....                                  | 1,000,721           | 1,059,742           | 933,056             | 1,011,430           | 1,196,881           | 1,155,566           | 809,530             | 1,075,417            |
| Colombia.....                                | 313,590             | 261,673             | 263,236             | 351,333             | 330,379             | 334,105             | 376,555             | 354,960              |
| Central America.....                         | 40,070              | 64,443              | 54,774              | 56,763              | 53,278              | 31,923              | 75,246              | 54,621               |
| Venezuela.....                               | 43,436              | 53,072              | 64,621              | 55,710              | 60,378              | 45,849              | 40,586              | 30,483               |
| Other countries.....                         | 47,030              | 96,457              | 119,383             | 86,822              | 87,655              | 68,398              | 166,244             | 82,626               |
| Total.....                                   | 1,444,847           | 1,535,392           | 1,435,070           | 1,562,058           | 1,728,569           | 1,628,841           | 1,458,161           | 1,598,107            |
| <b>Fibers:</b>                               |                     |                     |                     |                     |                     |                     |                     |                      |
| Cotton, raw: <sup>2</sup>                    | <i>Bales</i>        | <i>Bales</i>        | <i>Bales</i>        | <i>Bales</i>        | <i>Bales</i>        | <i>Bales</i>        | <i>Bales</i>        | <i>Bales</i>         |
| Egypt.....                                   | 213,975             | 197,868             | 232,442             | 131,740             | 21,688              | 66,313              | 52,640              | 101,952              |
| China.....                                   | 30,406              | 67,203              | 35,816              | 40,206              | 31,135              | 9,092               | 50,595              | 21,583               |
| British India.....                           | 19,330              | 26,081              | 53,842              | 59,200              | 34,677              | 21,865              | 3,383               | 27,167               |
| Mexico.....                                  | 97,384              | 24,076              | 54,402              | 40,702              | 14,235              | 21,921              | 223                 | 1,536                |
| Peru.....                                    | 18,097              | 19,133              | 18,066              | 19,144              | 1,623               | 3,737               | 4,889               | 1,736                |
| Other countries.....                         | 20,311              | 32,689              | 28,277              | 66,517              | 3,837               | 15,746              | 20,406              | 3,351                |
| Total.....                                   | 399,505             | 367,050             | 475,845             | 413,509             | 107,098             | 138,694             | 132,586             | 157,325              |
| Flax, unmanufactured: <sup>3</sup>           | <i>Tons</i>         | <i>Tons</i>         | <i>Tons</i>         | <i>Tons</i>         | <i>Tons</i>         | <i>Tons</i>         | <i>Tons</i>         | <i>Tons</i>          |
| Latvia.....                                  | 898                 | 1,520               | 2,176               | 2,231               | 1,926               | 1,836               | 18                  | 14                   |
| United Kingdom.....                          | 1,231               | 1,800               | 1,758               | 1,788               | 883                 | 487                 | 415                 | 952                  |
| U. S. S. R. (Russia in Europe).....          | 642                 | 149                 | 294                 | 1,127               | 155                 | 62                  | 2,047               | 2,521                |
| Belgium.....                                 | 446                 | 739                 | 757                 | 810                 | 636                 | 157                 | 217                 | 1,583                |
| Netherlands.....                             | 287                 | 253                 | 208                 | 231                 | 154                 | 67                  | 12                  | 92                   |
| Other Europe.....                            | 730                 | 726                 | 283                 | 695                 | 275                 | 1,077               | 184                 | 354                  |
| Total Europe.....                            | 4,294               | 5,187               | 5,476               | 6,862               | 3,429               | 3,686               | 2,398               | 5,516                |
| Canada.....                                  | 45                  | 126                 | 72                  | 97                  | 137                 | 233                 | 194                 | 173                  |
| Other countries.....                         | 366                 | 124                 | 102                 | 54                  | 32                  | 0                   | 0                   | 0                    |
| Total.....                                   | 4,705               | 5,437               | 5,650               | 7,013               | 3,598               | 3,919               | 3,087               | 5,689                |

<sup>1</sup> Preliminary. Imports for consumption.<sup>2</sup> Bales of 478 pounds net.<sup>3</sup> Tons of 2,240 pounds.



TABLE 450.—Imports (general) of principal agricultural products into the United States, by countries, 1926-27 to 1933-34—Continued

| Article and country from which imported | Year ended June 30 |                |                |                |                |                  |                  |                      |
|---|--------------------|----------------|----------------|----------------|----------------|------------------|------------------|----------------------|
|   | 1926-27            | 1927-28        | 1928-29        | 1929-30        | 1930-31        | 1931-32          | 1932-33          | 1933-34 <sup>1</sup> |
| <b>VEGETABLE PRODUCTS—CON.</b>          |                    |                |                |                |                |                  |                  |                      |
| <b>Fibers, Continued:</b>               |                    |                |                |                |                |                  |                  |                      |
| Manila fiber: <sup>2</sup>              |                    |                |                |                |                |                  |                  |                      |
| Philippine Islands.....                 | Tons<br>60,381     | Tons<br>46,967 | Tons<br>59,832 | Tons<br>70,813 | Tons<br>42,569 | Tons<br>26,532   | Tons<br>24,870   | Tons<br>42,387       |
| Other countries.....                    | 249                | 1,051          | 472            | 2,035          | 665            | 202              | 301              | 434                  |
| Total.....                              | 60,630             | 48,018         | 60,304         | 72,848         | 43,204         | 26,734           | 25,171           | 42,821               |
| Sisal and henequen: <sup>3</sup>        |                    |                |                |                |                |                  |                  |                      |
| Mexico.....                             | 82,008             | 92,534         | 95,080         | 57,098         | 38,463         | 71,428           | 105,353          | 65,470               |
| Netherlands Indies.....                 | 18,870             | 16,453         | 20,037         | 30,450         | 24,754         | 14,915           | 38,137           | 36,898               |
| Cuba.....                               | 2,770              | 1,849          | 2,186          | 3,402          | 4,181          | 2,065            | 3,933            | 2,467                |
| Netherlands.....                        | 283                | 1,973          | 2,216          | 3,161          | 2,595          | 5,219            | 0                | 0                    |
| United Kingdom.....                     | 297                | 234            | 1,686          | 1,533          | 7,264          | 7,922            | 55               | 82                   |
| Other countries.....                    | 11,968             | 11,181         | 14,146         | 16,814         | 6,675          | 7,243            | 18,488           | 11,004               |
| Total.....                              | 116,151            | 124,204        | 135,351        | 112,508        | 83,932         | 108,792          | 165,966          | 115,911              |
| <b>Fruits:</b>                          |                    |                |                |                |                |                  |                  |                      |
| Dried:                                  |                    |                |                |                |                |                  |                  |                      |
| Cherries, dried or prepared:            | 1,000 pounds       | 1,000 pounds   | 1,000 pounds   | 1,000 pounds   | 1,000 pounds   | 1,000 pounds     | 1,000 pounds     | 1,000 pounds         |
| Italy.....                              | 15,112             | 325            | 107            | 76             | 512            | ( <sup>2</sup> ) | 3                | 3                    |
| France.....                             | 616                | 573            | 227            | 743            | 158            | 146              | 96               | 63                   |
| Other countries.....                    | 246                | 66             | 50             | 47             | 810            | 2                | ( <sup>2</sup> ) | 1                    |
| Total.....                              | 15,974             | 964            | 384            | 866            | 1,280          | 148              | 99               | 67                   |
| Currants:                               |                    |                |                |                |                |                  |                  |                      |
| Greece.....                             | 12,714             | 10,800         | 9,178          | 9,950          | 8,594          | 6,852            | 6,543            | 5,951                |
| Other Europe.....                       | 198                | 56             | 108            | 13             | 0              | 0                | 0                | 0                    |
| Total Europe.....                       | 12,912             | 10,856         | 9,286          | 9,963          | 8,594          | 6,852            | 6,543            | 5,951                |
| Other countries.....                    | 88                 | 178            | 96             | 92             | 16             | 11               | 62               | 40                   |
| Total.....                              | 13,011             | 11,034         | 9,382          | 10,055         | 8,610          | 6,863            | 6,605            | 5,991                |
| Dates:                                  |                    |                |                |                |                |                  |                  |                      |
| Iraq.....                               | 10,161             | 34,700         | 45,373         | 48,804         | 34,418         | 38,492           | 30,504           | 22,783               |
| United Kingdom.....                     | 3,413              | 6,937          | 3,085          | 1,350          | 5,544          | 6,652            | 16,368           | 6,819                |
| Arabia.....                             | 32,828             | 694            | 476            | 703            | 990            | 153              | 284              | 10,647               |
| Other countries.....                    | 3,032              | 1,747          | 5,153          | 2,393          | 1,476          | 3,604            | 666              | 2,039                |
| Total.....                              | 49,434             | 44,128         | 54,087         | 53,250         | 42,428         | 43,901           | 47,822           | 42,268               |
| Figs:                                   |                    |                |                |                |                |                  |                  |                      |
| Turkey (Asia and Europe).....           | 22,270             | 16,566         | 22,418         | 12,784         | 9,998          | 6,249            | 4,299            | 4,862                |
| Portugal.....                           | 2,786              | 5,933          | 4,404          | 934            | 843            | 397              | 30               | 121                  |
| Greece.....                             | 6,842              | 2,465          | 4,910          | 6,084          | 2,933          | 1,181            | 969              | 963                  |
| Italy.....                              | 3,305              | 1,943          | 1,358          | 641            | 1,018          | 780              | 709              | 796                  |
| Other countries.....                    | 4,301              | 4,552          | 2,473          | 1,474          | 33             | 88               | 31               | 57                   |
| Total.....                              | 39,504             | 31,459         | 35,563         | 21,917         | 14,825         | 8,695            | 6,038            | 6,799                |
| <b>Fresh:</b>                           |                    |                |                |                |                |                  |                  |                      |
| Avocados: <sup>4</sup>                  |                    |                |                |                |                |                  |                  |                      |
| Cuba.....                               | 5,261              | 2,169          | 4,612          | 6,598          | 9,544          | 10,190           | 8,681            | 5,263                |
| Other countries.....                    | 115                | 161            | 139            | 146            | 2              | 4                | 0                | ( <sup>2</sup> )     |
| Total.....                              | 5,376              | 2,330          | 4,751          | 6,744          | 9,546          | 10,194           | 8,681            | 5,263                |
| Bananas:                                | 1,000 bunches      | 1,000 bunches  | 1,000 bunches  | 1,000 bunches  | 1,000 bunches  | 1,000 bunches    | 1,000 bunches    | 1,000 bunches        |
| Central America.....                    | 32,208             | 39,676         | 42,386         | 42,764         | 36,818         | 33,698           | 31,636           | 28,938               |
| Jamaica.....                            | 13,861             | 13,398         | 11,722         | 11,513         | 11,010         | 7,905            | 2,368            | 264                  |
| Mexico.....                             | 5,928              | 6,511          | 4,481          | 6,200          | 5,520          | 4,957            | 5,644            | 7,705                |
| Cuba.....                               | 2,905              | 2,730          | 3,467          | 4,149          | 3,562          | 3,183            | 2,668            | 3,814                |
| Colombia.....                           | 2,073              | 1,695          | 1,439          | 1,171          | 909            | 1,970            | 2,714            | 1,752                |
| Other countries.....                    | 127                | 19             | 35             | 112            | 22             | 92               | 84               | 623                  |
| Total.....                              | 57,102             | 64,029         | 63,530         | 65,909         | 57,841         | 51,785           | 45,114           | 43,096               |

<sup>1</sup> Preliminary. Imports for consumption.<sup>2</sup> Less than 500.<sup>3</sup> Tons of 2,240 pounds.<sup>4</sup> Yugoslavia.<sup>5</sup> Compiled from Report of the Federal Horticultural Board, 1927 and 1928, Report of the Plant Quarantine and Control Administration, 1929 and 1930, and official records of the Bureau of Foreign and Domestic Commerce.

TABLE 450.—Imports (general) of principal agricultural products into the United States, by countries, 1926-27 to 1933-34—Continued

| Article and country from which imported    | Year ended June 30 |               |               |               |               |               |               |                      |
|--|--------------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------------|
|  | 1926-27            | 1927-28       | 1928-29       | 1929-30       | 1930-31       | 1931-32       | 1932-33       | 1933-34 <sup>1</sup> |
| <b>VEGETABLE PRODUCTS—con.</b>             |                    |               |               |               |               |               |               |                      |
| <b>Fruits—Continued.</b>                   |                    |               |               |               |               |               |               |                      |
| <b>Fresh—Continued.</b>                    |                    |               |               |               |               |               |               |                      |
| Cherries, natural, sulphured, or in brine: | 1,000 pounds       | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds         |
| Italy.....                                 | 5,189              | 12,009        | 12,365        | 20,327        | 7,528         | 4,446         | 871           | 749                  |
| France.....                                | 2                  | 2,465         | 200           | 1,346         | 85            | 351           | 2             | 0                    |
| Yugoslavia <sup>10</sup> .....             | 0                  | 354           | 266           | 410           | 253           | 1,106         | 788           | 901                  |
| Canada.....                                | 543                | 56            | 140           | 279           | 60            | 31            | 19            | 30                   |
| Other countries.....                       | 19                 | 252           | 202           | (?)           | 0             | 9             | 22            | 4                    |
| Total.....                                 | 5,733              | 15,136        | 13,173        | 22,362        | 7,926         | 5,943         | 1,702         | 1,684                |
| Lemons: <sup>11</sup>                      | 1,000 boxes        | 1,000 boxes   | 1,000 boxes   | 1,000 boxes   | 1,000 boxes   | 1,000 boxes   | 1,000 boxes   | 1,000 boxes          |
| Italy.....                                 | 654                | 1,300         | 382           | 1,217         | 342           | 159           | 146           | 47                   |
| Other Europe.....                          | 5                  | 4             | 8             | 10            | 8             | 17            | (?)           | 0                    |
| Total Europe.....                          | 659                | 1,304         | 390           | 1,227         | 350           | 176           | 146           | 47                   |
| Other countries.....                       | 0                  | 4             | 1             | 2             | 0             | (?)           | (?)           | (?)                  |
| Total.....                                 | 659                | 1,308         | 391           | 1,229         | 350           | 176           | 146           | 47                   |
| Olives, in brine:                          | 1,000 gallons      | 1,000 gallons | 1,000 gallons | 1,000 gallons | 1,000 gallons | 1,000 gallons | 1,000 gallons | 1,000 gallons        |
| Spain.....                                 | 4,664              | 5,739         | 6,209         | 7,746         | 6,649         | 6,003         | 3,984         | 5,085                |
| Greece.....                                | 98                 | 144           | 204           | 308           | 625           | 666           | 586           | 566                  |
| Other Europe.....                          | 428                | 532           | 496           | 357           | 144           | 367           | 92            | 147                  |
| Total Europe.....                          | 5,185              | 6,415         | 6,909         | 8,411         | 7,418         | 7,036         | 4,662         | 5,798                |
| Other countries.....                       | 27                 | 43            | 46            | 41            | 11            | 21            | 13            | 8                    |
| Total.....                                 | 5,212              | 6,458         | 6,955         | 8,452         | 7,429         | 7,057         | 4,675         | 5,806                |
| Grains, flours, etc.:                      | 1,000 pounds       | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds         |
| Barley malt:                               |                    |               |               |               |               |               |               |                      |
| Canada.....                                |                    |               |               |               | 22,369        | 34,551        | 50,515        | 129,936              |
| Czechoslovakia.....                        |                    |               |               |               | 657           | 131           | 1,209         | 9,835                |
| Germany.....                               |                    |               |               |               | 347           | 462           | 334           | 8,543                |
| Hungary.....                               |                    |               |               |               | (?)           | 0             | 0             | 8,954                |
| Mexico.....                                |                    |               |               |               | 0             | 0             | 0             | 3,354                |
| Other countries.....                       |                    |               |               |               | 34            | 3             | 341           | 8,573                |
| Total.....                                 | 13,895             | 13,828        | 13,962        | 13,106        | 23,407        | 35,177        | 52,399        | 169,195              |
| Rice, cleaned, excluding paddy:            |                    |               |               |               |               |               |               |                      |
| Hong Kong.....                             | 19,741             | 20,788        | 17,934        | 15,094        | 15,878        | 11,011        | 8,777         | 7,639                |
| Mexico.....                                | 8,002              | 1,264         | 1,022         | 1,259         | 2,700         | 1,608         | 5,009         | 1,613                |
| Italy.....                                 | 3,695              | 3,971         | 1,032         | 1,310         | 1,391         | 1,072         | 970           | 846                  |
| Netherlands.....                           | 5,837              | 2,139         | 271           | 1,622         | 2,419         | 1,233         | 292           | 1                    |
| British India.....                         | 465                | 1,061         | 2,350         | 243           | 1,059         | 724           | 1,022         | 349                  |
| Germany.....                               | 3,768              | 1,077         | 396           | 459           | 2,367         | 468           | 84            | 155                  |
| Siam.....                                  | 2,612              | 448           | 1             | 0             | 0             | 0             | 0             | 5                    |
| Philippine Islands.....                    | 278                | 168           | 1             | 5             | 202           | 2             | 10            | 2,831                |
| Other countries.....                       | 9,668              | 2,928         | 2,130         | 929           | 812           | 1,041         | 1,429         | 1,740                |
| Total.....                                 | 54,366             | 33,842        | 25,167        | 20,951        | 26,828        | 17,169        | 17,593        | 15,179               |
| Rice, paddy:                               |                    |               |               |               |               |               |               |                      |
| Netherlands.....                           | 13,121             | 1,826         | 2,329         | 2,010         | 2,051         | 1,035         | 510           | 998                  |
| British India.....                         | 0                  | 0             | 0             | 0             | 0             | 10            | 321           | 300                  |
| Other countries.....                       | 13,6               | 0             | 0             | 166           | 65            | 42            | 15            | 167                  |
| Total.....                                 | 13,121             | 1,826         | 2,329         | 2,176         | 2,116         | 1,067         | 846           | 1,465                |
| Rice, uncleaned:                           |                    |               |               |               |               |               |               |                      |
| Mexico.....                                | 7,802              | 3,036         | 5,904         | 4,181         | 0             | 0             | 71            | 0                    |
| Japan.....                                 | 3,213              | 2,316         | 1,441         | 1,492         | 5,011         | 1,468         | 1,605         | 2,327                |
| British India.....                         | 224                | 428           | 325           | 694           | 419           | 55            | 20            | 825                  |
| British Guiana.....                        | 0                  | 40            | 66            | 423           | 656           | 106           | 0             | 20                   |
| Philippine Islands.....                    | 44                 | 0             | 0             | 0             | 50            | 0             | (?)           | 231                  |
| Other countries.....                       | 489                | 176           | 324           | 215           | 76            | 55            | 4             | 4                    |
| Total.....                                 | 11,772             | 5,966         | 8,060         | 7,005         | 6,212         | 1,684         | 1,600         | 3,317                |

<sup>1</sup> Preliminary. Imports for consumption.<sup>2</sup> Less than 500.<sup>10</sup> Includes Albania prior to Jan. 1, 1932.<sup>11</sup> Boxes of 74 pounds net.<sup>12</sup> Imports for consumption. Not available by countries.<sup>13</sup> January-June.

TABLE 450.—Imports (general) of principal agricultural products into the United States, by countries, 1926-27 to 1933-34—Continued

| Article and country from which imported | Year ended June 30 |               |               |                  |                  |                  |                  |                      |
|---|--------------------|---------------|---------------|------------------|------------------|------------------|------------------|----------------------|
|   | 1926-27            | 1927-28       | 1928-29       | 1929-30          | 1930-31          | 1931-32          | 1932-33          | 1933-34 <sup>1</sup> |
| <b>VEGETABLE PRODUCTS—CON.</b>          |                    |               |               |                  |                  |                  |                  |                      |
| <b>Grains, flour, etc.—Continued</b>    |                    |               |               |                  |                  |                  |                  |                      |
| Rice, flour, and meal:                  | 1,000 pounds       | 1,000 pounds  | 1,000 pounds  | 1,000 pounds     | 1,000 pounds     | 1,000 pounds     | 1,000 pounds     | 1,000 pounds         |
| Mexico.....                             | 2,307              | 1,981         | 508           | 340              | 0                | 0                | 0                | 2,756                |
| Japan.....                              | 469                | 442           | 504           | 472              | 426              | 352              | 408              | 418                  |
| Hong Kong.....                          | 95                 | 100           | 62            | 86               | 80               | 123              | 86               | 88                   |
| China.....                              | 36                 | 38            | 68            | 51               | 24               | 86               | 26               | 38                   |
| France.....                             | 3                  | 3             | 5             | 7                | 30               | 28               | 14               | 234                  |
| British India.....                      | 0                  | 0             | 0             | 0                | 0                | 0                | 0                | 67                   |
| Germany.....                            | ( <sup>2</sup> )   | 10            | 15            | ( <sup>2</sup> ) | ( <sup>2</sup> ) | ( <sup>2</sup> ) | 344              | 1,804                |
| Siam.....                               | 0                  | 0             | 0             | 0                | 0                | 0                | 0                | 3,083                |
| Netherlands.....                        | 0                  | 21            | 0             | 100              | 0                | 0                | 660              | 1,562                |
| Other countries.....                    | 61                 | 11            | 77            | 29               | 63               | 19               | 34               | 10,472               |
| Total.....                              | 2,972              | 2,606         | 1,239         | 1,085            | 603              | 556              | 1,639            | 21,943               |
| Wheat:                                  | 1,000 bushels      | 1,000 bushels | 1,000 bushels | 1,000 bushels    | 1,000 bushels    | 1,000 bushels    | 1,000 bushels    | 1,000 bushels        |
| Canada.....                             | 13,234             | 15,706        | 21,429        | 12,948           | 19,053           | 12,885           | 9,379            | 11,482               |
| Other countries.....                    | 1                  | 0             | 1             | 0                | 1                | ( <sup>2</sup> ) | ( <sup>2</sup> ) | 8                    |
| Total.....                              | 13,235             | 15,706        | 21,430        | 12,948           | 19,054           | 12,885           | 9,379            | 11,490               |
| Wheat flour:                            | Barrels            | Barrels       | Barrels       | Barrels          | Barrels          | Barrels          | Barrels          | Barrels              |
| Canada.....                             | 5,344              | 3,474         | 2,273         | 889              | 630              | 145              | 560              | 770                  |
| United Kingdom.....                     | 474                | 49            | 45            | 651              | 363              | 43               | 44               | ( <sup>2</sup> )     |
| Other countries.....                    | 238                | 2,206         | 285           | 163              | 169              | 84               | 77               | 56                   |
| Total.....                              | 6,056              | 5,729         | 2,603         | 1,703            | 1,162            | 272              | 681              | 826                  |
| Nuts:                                   | 1,000 pounds       | 1,000 pounds  | 1,000 pounds  | 1,000 pounds     | 1,000 pounds     | 1,000 pounds     | 1,000 pounds     | 1,000 pounds         |
| Almonds, shelled:                       |                    |               |               |                  |                  |                  |                  |                      |
| Spain.....                              | 3,389              | 9,637         | 10,399        | 8,902            | 6,432            | 4,830            | 3,386            | 2,600                |
| Italy.....                              | 6,076              | 7,703         | 6,578         | 8,912            | 6,343            | 3,267            | 1,821            | 632                  |
| France.....                             | 541                | 306           | 236           | 136              | 223              | 103              | 53               | 101                  |
| Other Europe.....                       | 165                | 197           | 273           | 118              | 61               | 5                | 1                | 6                    |
| Total Europe.....                       | 15,171             | 17,843        | 17,536        | 18,068           | 13,064           | 8,285            | 4,761            | 3,339                |
| Other countries.....                    | 528                | 414           | 570           | 236              | 177              | 51               | 102              | 71                   |
| Total.....                              | 15,699             | 18,257        | 18,106        | 18,304           | 13,241           | 8,336            | 4,863            | 3,410                |
| Almonds, not shelled:                   |                    |               |               |                  |                  |                  |                  |                      |
| Spain.....                              | 158                | 229           | 1,068         | 4,530            | 3                | 1                | 141              | 0                    |
| Italy.....                              | 180                | 98            | 73            | 375              | 18               | 7                | 1                | 5                    |
| France.....                             | 154                | 131           | 474           | 518              | 54               | 0                | 0                | 0                    |
| Other Europe.....                       | 7                  | 5             | 267           | 61               | 0                | 0                | ( <sup>2</sup> ) | 0                    |
| Total Europe.....                       | 499                | 463           | 1,882         | 5,484            | 75               | 8                | 142              | 5                    |
| Other countries.....                    | 139                | 1             | 9             | 19               | 3                | 1                | 2                | 1                    |
| Total.....                              | 638                | 464           | 1,891         | 5,503            | 78               | 9                | 144              | 6                    |
| Brazil, shelled: <sup>14</sup>          |                    |               |               |                  |                  |                  |                  |                      |
| Brazil.....                             |                    |               | 13 224        | 1,586            | 2,529            | 6,540            | 4,856            | 6,719                |
| United Kingdom.....                     |                    |               | 13 808        | 2,500            | 645              | 978              | 415              | 129                  |
| Other countries.....                    |                    |               | 13 28         | 4                | 0                | 0                | 25               | 172                  |
| Total.....                              |                    |               | 13 1,060      | 4,090            | 3,174            | 7,518            | 5,296            | 7,020                |
| Brazil, not shelled: <sup>15</sup>      |                    |               |               |                  |                  |                  |                  |                      |
| Brazil.....                             | 41,999             | 12,575        | 32,713        | 18,820           | 20,684           | 15,736           | 16,521           | 16,347               |
| United Kingdom.....                     | 341                | 771           | 2,913         | 197              | 2,022            | 740              | 941              | 446                  |
| Other countries.....                    | 517                | 93            | 151           | 62               | 24               | 10               | 0                | 0                    |
| Total.....                              | 42,857             | 13,439        | 35,777        | 19,079           | 22,730           | 16,486           | 17,462           | 16,793               |
| Cashew nuts: <sup>16</sup>              |                    |               |               |                  |                  |                  |                  |                      |
| British India.....                      |                    |               |               | 13 3,277         | 7,178            | 12,948           | 7,057            | 13,741               |
| France.....                             |                    |               |               | 13 184           | 21               | 38               | 0                | 3                    |
| Haiti, Republic of.....                 |                    |               |               | 13 4             | 110              | 43               | 3                | 32                   |
| Other countries.....                    |                    |               |               | 13 60            | 128              | 137              | 91               | 268                  |
| Total.....                              |                    |               |               | 13 3,534         | 7,437            | 13,166           | 7,151            | 14,069               |

<sup>1</sup> Preliminary. Imports for consumption.<sup>2</sup> Less than 500.<sup>13</sup> January-June.<sup>14</sup> Included with "not shelled" prior to Jan. 1, 1929.<sup>15</sup> Includes "shelled" prior to Jan. 1, 1929.<sup>16</sup> Included with "other edible nuts" prior to Jan. 1, 1930.

TABLE 450.—Imports (general) of principal agricultural products into the United States, by countries, 1926-27 to 1933-34—Continued

| Article and country from which imported | Year ended June 30  |                     |                     |                     |                     |                     |                     |                      |
|---|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
|   | 1926-27             | 1927-28             | 1928-29             | 1929-30             | 1930-31             | 1931-32             | 1932-33             | 1933-34 <sup>1</sup> |
| <b>VEGETABLE PRODUCTS—CON.</b>          |                     |                     |                     |                     |                     |                     |                     |                      |
| <b>Nuts—Continued.</b>                  |                     |                     |                     |                     |                     |                     |                     |                      |
| <b>Filberts, shelled:</b>               | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i>  |
| France.....                             | 1,014               | 1,206               | 1,027               | 178                 | 334                 | 91                  | 52                  | 27                   |
| Italy.....                              | 732                 | 348                 | 746                 | 752                 | 345                 | 335                 | 312                 | 193                  |
| Spain.....                              | 421                 | 329                 | 1,764               | 2,888               | 37                  | 428                 | 240                 | 357                  |
| Germany.....                            | 277                 | 22                  | 175                 | 49                  | 334                 | 0                   | 0                   | 0                    |
| Other Europe.....                       | 281                 | 77                  | 63                  | 25                  | 118                 | 74                  | 16                  | 1                    |
| Total Europe.....                       | 2,725               | 1,982               | 3,775               | 3,892               | 1,168               | 928                 | 620                 | 578                  |
| Turkey (Asia and Europe).....           | 2,133               | 4,618               | 1,800               | 609                 | 3,417               | 1,422               | 2,686               | 1,448                |
| Other countries.....                    | 92                  | 0                   | 31                  | 2                   | 11                  | 0                   | 0                   | 0                    |
| Total.....                              | 4,950               | 6,600               | 5,606               | 4,503               | 4,596               | 2,350               | 3,306               | 2,026                |
| <b>Filberts, not shelled:</b>           |                     |                     |                     |                     |                     |                     |                     |                      |
| Italy.....                              | 9,296               | 6,687               | 11,053              | 4,548               | 3,987               | 6,293               | 5,717               | 1,637                |
| Spain.....                              | 49                  | 1,936               | 818                 | 954                 | 423                 | 73                  | 83                  | 583                  |
| Other Europe.....                       | 291                 | 1,334               | 243                 | 254                 | 229                 | 11                  | 0                   | 91                   |
| Total Europe.....                       | 9,636               | 9,957               | 12,114              | 5,756               | 4,639               | 6,377               | 5,800               | 2,311                |
| Turkey (Asia and Europe).....           | 54                  | 1,265               | 20                  | 0                   | 820                 | 0                   | 0                   | 240                  |
| Other countries.....                    | 132                 | 22                  | 0                   | 0                   | 200                 | 0                   | 0                   | 0                    |
| Total.....                              | 9,822               | 11,244              | 12,134              | 5,756               | 5,659               | 6,377               | 5,800               | 2,551                |
| <b>Peanuts, shelled:</b>                |                     |                     |                     |                     |                     |                     |                     |                      |
| China.....                              | 44,729              | 49,986              | 23,987              | 7,140               | 4,989               | 341                 | 1                   | 5                    |
| Kwantung.....                           | 962                 | 1,533               | 1,682               | 544                 | 394                 | 25                  | 0                   | 0                    |
| Japan.....                              | 267                 | 110                 | 330                 | 3                   | 2                   | 1                   | 100                 | 1                    |
| Hong Kong.....                          | 15                  | 13                  | 58                  | 9                   | 22                  | 20                  | 8                   | 12                   |
| Philippine Islands.....                 | 0                   | 0                   | 0                   | 351                 | 1,075               | 382                 | 0                   | 241                  |
| Other countries.....                    | 879                 | 3,142               | 549                 | 305                 | 23                  | 1                   | 0                   | 1                    |
| Total.....                              | 46,852              | 54,784              | 26,606              | 8,352               | 6,505               | 770                 | 109                 | 260                  |
| <b>Peanuts, not shelled:</b>            |                     |                     |                     |                     |                     |                     |                     |                      |
| China.....                              | 3,812               | 12,339              | 4,680               | 2,445               | 3,483               | 724                 | 24                  | 12                   |
| Japan.....                              | 245                 | 509                 | 360                 | 212                 | 343                 | 156                 | 96                  | 118                  |
| Hong Kong.....                          | 50                  | 58                  | 108                 | 67                  | 126                 | 188                 | 75                  | 79                   |
| Kwantung.....                           | 0                   | 100                 | 200                 | 110                 | 255                 | 80                  | 0                   | 0                    |
| Other countries.....                    | 303                 | 492                 | 361                 | 76                  | 76                  | 1                   | 0                   | 1                    |
| Total.....                              | 4,410               | 13,498              | 5,709               | 2,910               | 4,283               | 1,149               | 195                 | 210                  |
| <b>Walnuts, shelled:</b>                |                     |                     |                     |                     |                     |                     |                     |                      |
| France.....                             | 8,995               | 12,551              | 9,308               | 11,357              | 4,679               | 5,094               | 2,729               | 1,595                |
| Other Europe.....                       | 3,007               | 889                 | 2,033               | 722                 | 2,090               | 1,245               | 847                 | 386                  |
| Total Europe.....                       | 12,002              | 13,540              | 11,341              | 12,079              | 6,769               | 6,339               | 3,576               | 1,981                |
| China.....                              | 8,144               | 1,652               | 5,052               | 4,364               | 3,216               | 4,129               | 1,768               | 2,969                |
| Other countries.....                    | 833                 | 523                 | 1,563               | 835                 | 1,341               | 263                 | 434                 | 597                  |
| Total.....                              | 20,979              | 16,015              | 17,956              | 17,278              | 16,326              | 10,731              | 5,778               | 5,547                |
| <b>Walnuts, not shelled:</b>            |                     |                     |                     |                     |                     |                     |                     |                      |
| Italy.....                              | 12,082              | 4,558               | 4,501               | 4,620               | 2,356               | 4,099               | 1,802               | 71                   |
| France.....                             | 3,566               | 2,244               | 2,720               | 831                 | 477                 | 1,201               | 80                  | 39                   |
| Other Europe.....                       | 3,004               | 144                 | 3,336               | 117                 | 99                  | 68                  | 2                   | 6                    |
| Total Europe.....                       | 18,652              | 6,946               | 10,557              | 5,568               | 2,932               | 5,368               | 1,884               | 116                  |
| China.....                              | 5,870               | 2,531               | 4,575               | 1,419               | 504                 | 81                  | 42                  | ( <sup>2</sup> )     |
| Other countries.....                    | 1,184               | 837                 | 449                 | 37                  | 115                 | 53                  | 409                 | 205                  |
| Total.....                              | 25,706              | 10,314              | 15,581              | 7,024               | 3,552               | 5,502               | 2,335               | 321                  |

<sup>1</sup> Preliminary. Imports for consumption.<sup>2</sup> Less than 500.

TABLE 450.—*Imports (general) of principal agricultural products into the United States, by countries, 1926-27 to 1933-34—Continued*

| Article and country from which imported     | Year ended June 30         |                            |                            |                            |                            |                            |                            |                            |
|---|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
|   | 1926-27                    | 1927-28                    | 1928-29                    | 1929-30                    | 1930-31                    | 1931-32                    | 1932-33                    | 1933-34 <sup>1</sup>       |
| <b>VEGETABLE PRODUCTS—CON.</b>              |                            |                            |                            |                            |                            |                            |                            |                            |
| Oils, vegetable:                            |                            |                            |                            |                            |                            |                            |                            |                            |
| Coconut, product of Philippine Islands..... | 1,000<br>pounds<br>286,776 | 1,000<br>pounds<br>273,309 | 1,000<br>pounds<br>377,288 | 1,000<br>pounds<br>370,800 | 1,000<br>pounds<br>315,942 | 1,000<br>pounds<br>297,083 | 1,000<br>pounds<br>280,700 | 1,000<br>pounds<br>353,105 |
| Olive, edible:                              |                            |                            |                            |                            |                            |                            |                            |                            |
| Italy.....                                  | 58,706                     | 45,145                     | 62,202                     | 71,265                     | 45,661                     | 47,116                     | 45,841                     | 32,926                     |
| Spain.....                                  | 21,682                     | 17,797                     | 16,910                     | 20,909                     | 23,675                     | 27,823                     | 21,712                     | 21,879                     |
| France.....                                 | 4,705                      | 5,335                      | 6,182                      | 2,959                      | 2,335                      | 2,395                      | 1,920                      | 2,850                      |
| Other Europe.....                           | 1,800                      | 954                        | 1,527                      | 710                        | 542                        | 204                        | 1,556                      | 610                        |
| Total Europe.....                           | 86,393                     | 69,231                     | 86,821                     | 95,843                     | 72,213                     | 77,538                     | 71,029                     | 57,265                     |
| Other countries.....                        | 1,529                      | 899                        | 1,297                      | 2,603                      | 1,681                      | 1,151                      | 1,336                      | 163                        |
| Total.....                                  | 87,922                     | 70,130                     | 88,118                     | 98,446                     | 73,794                     | 78,689                     | 72,365                     | 57,433                     |
| Olive, inedible:                            |                            |                            |                            |                            |                            |                            |                            |                            |
| Italy.....                                  | 32,124                     | 29,244                     | 35,889                     | 33,992                     | 27,364                     | 28,831                     | 19,096                     | 17,863                     |
| Spain.....                                  | 10,882                     | 12,333                     | 9,575                      | 16,518                     | 13,987                     | 20,352                     | 10,847                     | 9,173                      |
| Greece.....                                 | 2,206                      | 2,783                      | 6,856                      | 346                        | 2,579                      | 3,030                      | 11,329                     | 8,039                      |
| Portugal.....                               | 783                        | 1,675                      | 2,122                      | 425                        | 1,038                      | 1,445                      | 1,625                      | 1,122                      |
| Other Europe.....                           | 576                        | 525                        | 325                        | 1,817                      | 25                         | 741                        | 50                         | 3                          |
| Total Europe.....                           | 46,571                     | 46,560                     | 54,767                     | 53,098                     | 44,993                     | 54,399                     | 42,947                     | 36,200                     |
| Algeria and Tunisia.....                    | 206                        | 1,296                      | 4,103                      | 6,877                      | 6,753                      | 4,110                      | 9,527                      | 10,815                     |
| Other countries.....                        | 30                         | 107                        | 807                        | 198                        | 666                        | 359                        | 319                        | 0                          |
| Total.....                                  | 46,807                     | 47,963                     | 59,677                     | 60,173                     | 52,412                     | 58,868                     | 52,793                     | 46,515                     |
| Palm oil:                                   |                            |                            |                            |                            |                            |                            |                            |                            |
| Netherlands Indies.....                     | 10,493                     | 22,855                     | 33,655                     | 58,738                     | 84,429                     | 91,516                     | 145,694                    | 137,061                    |
| British West Africa.....                    | 50,762                     | 97,043                     | 122,315                    | 118,368                    | 151,726                    | 33,305                     | 63,840                     | 40,336                     |
| Belgian Congo.....                          | 17,187                     | 26,406                     | 36,949                     | 31,655                     | 54,882                     | 32,769                     | 38,229                     | 45,674                     |
| British Malaya.....                         | 2,077                      | 1,002                      | 1,997                      | 3,148                      | 3,950                      | 1,696                      | 2,034                      | 7,144                      |
| Other countries.....                        | 29,665                     | 36,671                     | 33,314                     | 25,951                     | 18,953                     | 11,866                     | 8,841                      | 18,241                     |
| Total.....                                  | 110,184                    | 183,977                    | 228,230                    | 237,860                    | 313,940                    | 221,155                    | 253,638                    | 248,456                    |
| Soybean:                                    |                            |                            |                            |                            |                            |                            |                            |                            |
| Kwantung.....                               | 15,759                     | 13,546                     | 11,089                     | 12,867                     | 5,769                      | 2,358                      | 0                          | 2,466                      |
| China.....                                  | 1,803                      | 891                        | 1,520                      | 0                          | 0                          | 723                        | 0                          | 0                          |
| Japan.....                                  | 4,033                      | 41                         | 1,729                      | 121                        | 1                          | ( <sup>2</sup> )           | 0                          | 45                         |
| Other countries.....                        | 1,958                      | 84                         | 2,834                      | 244                        | 145                        | 4                          | 1                          | 1                          |
| Total.....                                  | 23,553                     | 14,562                     | 17,172                     | 13,332                     | 5,915                      | 3,085                      | 1                          | 2,512                      |
| Tung oil:                                   |                            |                            |                            |                            |                            |                            |                            |                            |
| China.....                                  | 89,255                     | 75,141                     | 101,256                    | 124,996                    | 95,927                     | 74,995                     | 81,779                     | 110,364                    |
| Hong Kong.....                              | 12,223                     | 7,367                      | 13,205                     | 5,828                      | 3,475                      | 6,171                      | 2,029                      | 11,527                     |
| Other countries.....                        | 950                        | 1,120                      | 779                        | 117                        | 0                          | 180                        | 50                         | 6                          |
| Total.....                                  | 102,428                    | 83,628                     | 115,240                    | 130,941                    | 99,402                     | 81,346                     | 83,858                     | 121,897                    |
| Oilseeds:                                   |                            |                            |                            |                            |                            |                            |                            |                            |
| Copra, not prepared:                        |                            |                            |                            |                            |                            |                            |                            |                            |
| Philippine Islands.....                     | 330,946                    | 336,920                    | 386,567                    | 269,193                    | 311,781                    | 229,346                    | 244,246                    | 499,057                    |
| Netherlands Indies.....                     | 10,579                     | 5,867                      | 27,144                     | 29,206                     | 76,495                     | 88,309                     | 168,693                    | 100,311                    |
| British Malaya.....                         | 59,746                     | 40,331                     | 34,700                     | 42,114                     | 57,619                     | 64,660                     | 34,590                     | 37,866                     |
| British Oceania.....                        | 19,131                     | 19,941                     | 37,685                     | 43,778                     | 45,774                     | 25,861                     | 26,082                     | 12,429                     |
| French Oceania.....                         | 29,188                     | 25,273                     | 21,306                     | 22,662                     | 21,482                     | 12,791                     | 16,166                     | 2,716                      |
| Australia.....                              | 37                         | 17,445                     | 55,988                     | 35,455                     | 30,077                     | 13,096                     | 0                          | 4                          |
| New Zealand.....                            | 0                          | 76                         | 4,281                      | 17,325                     | 13,835                     | 5,475                      | 0                          | 0                          |
| Other countries.....                        | 4,919                      | 10,255                     | 12,266                     | 8,723                      | 5,331                      | 6,208                      | 5,054                      | 699                        |
| Total.....                                  | 454,546                    | 456,158                    | 629,937                    | 493,456                    | 565,397                    | 445,741                    | 494,821                    | 653,182                    |
| Flaxseed:                                   |                            |                            |                            |                            |                            |                            |                            |                            |
| Argentina.....                              | 1,000<br>bushels<br>20,581 | 1,000<br>bushels<br>16,057 | 1,000<br>bushels<br>20,927 | 1,000<br>bushels<br>19,236 | 1,000<br>bushels<br>6,102  | 1,000<br>bushels<br>13,342 | 1,000<br>bushels<br>5,495  | 1,000<br>bushels<br>12,736 |
| Canada.....                                 | 3,566                      | 2,025                      | 2,528                      | 355                        | 1,490                      | 506                        | 718                        | 176                        |
| Uruguay.....                                | 23                         | 0                          | 38                         | 0                          | 221                        | 0                          | 0                          | 503                        |
| British India.....                          | 0                          | 0                          | 0                          | 59                         | 0                          | 2                          | 0                          | 4,511                      |
| Other countries.....                        | 54                         | 30                         | 1                          | 2                          | ( <sup>2</sup> )           | 0                          | ( <sup>2</sup> )           | 175                        |
| Total.....                                  | 24,224                     | 18,112                     | 23,494                     | 19,652                     | 7,813                      | 13,850                     | 6,213                      | 17,901                     |

<sup>1</sup> Preliminary. Imports for consumption.<sup>2</sup> Less than 500.

TABLE 450.—Imports (general) of principal agricultural products into the United States, by countries, 1926-27 to 1933-34—Continued

| Article and country from which imported | Year ended June 30 |               |               |               |               |               |               |                      |
|---|--------------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------------|
|   | 1926-27            | 1927-28       | 1928-29       | 1929-30       | 1930-31       | 1931-32       | 1932-33       | 1933-34 <sup>1</sup> |
| <b>VEGETABLE PRODUCTS—con.</b>          |                    |               |               |               |               |               |               |                      |
| Pepper, unground:                       | 1,000 pounds       | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds         |
| Netherlands Indies.....                 | 6,636              | 6,446         | 9,205         | 17,250        | 19,351        | 23,431        | 25,223        | 36,605               |
| British India.....                      | 11,048             | 7,907         | 6,218         | 7,505         | 6,995         | 4,754         | 2,517         | 3,552                |
| United Kingdom.....                     | 3,577              | 5,292         | 3,435         | 3,238         | 1,499         | 1,554         | 365           | 3,823                |
| British Malaya.....                     | 2,287              | 2,831         | 1,469         | 3,870         | 1,409         | 2,770         | 1,197         | 2,045                |
| French Indo-China.....                  | 280                | 44            | 2             | 261           | 1,964         | 538           | 0             | 337                  |
| Other countries.....                    | 1,389              | 1,458         | 5,334         | 1,864         | 81            | 141           | 168           | 168                  |
| Total.....                              | 25,217             | 23,978        | 25,663        | 30,988        | 31,299        | 33,188        | 29,470        | 43,330               |
| Sugar, raw, cane: <sup>17</sup>         | Tons               | Tons          | Tons          | Tons          | Tons          | Tons          | Tons          | Tons                 |
| Cuba.....                               | 3,953,360          | 3,399,294     | 4,108,503     | 2,769,371     | 2,404,979     | 2,350,218     | 1,691,625     | 1,289,150            |
| Philippine Islands.....                 | 427,747            | 612,859       | 604,695       | 808,878       | 859,467       | 874,374       | 1,225,019     | 1,458,555            |
| Virgin Islands.....                     | 4,072              | 8,617         | 7,953         | 4,837         | 3,578         | 4,075         | 5,037         | 3,623                |
| Other countries.....                    | 35,245             | 23,791        | 31,121        | 58,002        | 19,197        | 33,575        | 29,014        | 67,186               |
| Total.....                              | 4,420,424          | 4,044,561     | 4,752,302     | 3,641,088     | 3,287,221     | 3,262,242     | 2,950,695     | 2,818,523            |
| Tea:                                    | 1,000 pounds       | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds         |
| Japan.....                              | 28,430             | 25,399        | 27,329        | 22,048        | 21,416        | 22,927        | 24,269        | 24,799               |
| United Kingdom.....                     | 22,136             | 20,380        | 23,608        | 21,578        | 23,310        | 23,340        | 17,809        | 18,274               |
| Ceylon.....                             | 16,578             | 16,326        | 16,893        | 19,047        | 16,895        | 16,855        | 16,100        | 12,692               |
| China.....                              | 11,655             | 10,131        | 8,878         | 7,405         | 6,704         | 7,329         | 6,490         | 7,430                |
| British India.....                      | 8,059              | 9,198         | 7,688         | 9,217         | 10,612        | 9,886         | 12,033        | 8,686                |
| Netherlands Indies.....                 | 7,660              | 5,398         | 5,358         | 4,891         | 5,184         | 6,637         | 14,848        | 12,904               |
| Other countries.....                    | 2,884              | 3,267         | 2,881         | 2,182         | 3,027         | 3,485         | 3,319         | 2,906                |
| Total.....                              | 97,402             | 90,099        | 92,635        | 86,368        | 87,148        | 90,459        | 94,808        | 87,691               |
| Tobacco, leaf, unmanufactured:          |                    |               |               |               |               |               |               |                      |
| Product of the Philippine Islands.....  | 1,117              | 2,541         | 4,678         | 4,007         | 4,278         | 4,207         | 1,842         | 1,925                |
| For cigar wrappers:                     |                    |               |               |               |               |               |               |                      |
| Netherlands.....                        | 6,358              | 6,218         | 6,095         | 8,415         | 2,988         | 3,365         | 2,222         | 2,070                |
| Other countries.....                    | 115                | 126           | 117           | 126           | 51            | 52            | 106           | 143                  |
| Total.....                              | 6,473              | 6,344         | 6,212         | 8,541         | 3,039         | 3,417         | 2,328         | 2,213                |
| All other leaf:                         |                    |               |               |               |               |               |               |                      |
| Greece.....                             | 28,383             | 15,694        | 16,741        | 13,400        | 18,913        | 19,467        | 13,838        | 14,706               |
| Cuba.....                               | 24,233             | 21,530        | 22,116        | 21,773        | 18,299        | 13,048        | 9,230         | 11,371               |
| Turkey (Asia and Europe).....           | 15,355             | 17,289        | 14,269        | 6,162         | 12,974        | 13,293        | 17,769        | 12,788               |
| Italy.....                              | 13,708             | 13,743        | 11,268        | 6,563         | 12,124        | 13,931        | 8,178         | 6,983                |
| Germany.....                            | 973                | 1,242         | 305           | 391           | 71            | 175           | 88            | 53                   |
| Other countries.....                    | 847                | 729           | 1,284         | 87            | 284           | 728           | 1,687         | 1,029                |
| Total.....                              | 83,499             | 70,227        | 68,001        | 48,376        | 62,665        | 60,642        | 50,790        | 46,930               |
| Onions: <sup>18</sup>                   | 1,000 bushels      | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels        |
| Spain.....                              | 1,084              | 701           | 1,007         | 788           | 177           | 152           | 16            | 7                    |
| Egypt.....                              | 912                | 392           | 105           | 38            | 0             | 125           | 11            | 0                    |
| Chile.....                              | 76                 | 213           | 134           | 49            | 10            | 234           | 5             | 41                   |
| Italy.....                              | 65                 | 35            | 145           | 42            | 24            | 26            | 37            | 28                   |
| Netherlands.....                        | 48                 | 11            | 580           | 5             | 0             | 3             | 9             | ( <sup>2</sup> )     |
| Other countries.....                    | 113                | 47            | 79            | 16            | 3             | 125           | 4             | 4                    |
| Total.....                              | 2,293              | 1,399         | 2,050         | 918           | 214           | 665           | 73            | 80                   |
| India rubber, crude:                    | 1,000 pounds       | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds  | 1,000 pounds         |
| British Malaya.....                     | 602,756            | 534,834       | 811,843       | 788,594       | 733,419       | 759,029       | 561,782       | 907,092              |
| Netherlands Indies.....                 | 156,772            | 170,161       | 215,863       | 195,297       | 164,690       | 157,966       | 138,508       | 195,955              |
| Ceylon.....                             | 89,874             | 73,542        | 112,257       | 118,425       | 86,965        | 79,522        | 66,490        | 81,030               |
| United Kingdom.....                     | 55,155             | 110,575       | 50,938        | 7,249         | 27,970        | 65,715        | 1,102         | 1,516                |
| Other countries.....                    | 87,910             | 46,928        | 36,028        | 27,841        | 19,134        | 21,408        | 8,547         | 14,829               |
| Total.....                              | 992,467            | 926,040       | 1,226,929     | 1,137,406     | 1,082,198     | 1,083,640     | 776,429       | 1,200,422            |

<sup>1</sup> Preliminary. Imports for consumption.<sup>2</sup> Less than 500.<sup>17</sup> Tons of 2,000 pounds.<sup>18</sup> Bushels of 57 pounds.

Bureau of Agricultural Economics, Foreign Agricultural Service Division. Compiled from Monthly Summary of Foreign Commerce of the United States, January and June issues, 1927-32; official records of the Bureau of Foreign and Domestic Commerce and of the United States Tariff Commission.

TABLE 451.—Oil cake and oil-cake meal: International trade, average 1925-29, annual 1931-33

| Country                            | Calendar year   |                 |                 |                 |                 |                 |                   |                 |
|------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-----------------|
|                                    | Average 1925-29 |                 | 1931            |                 | 1932            |                 | 1933 <sup>1</sup> |                 |
|                                    | Exports         | Imports         | Exports         | Imports         | Exports         | Imports         | Exports           | Imports         |
| PRINCIPAL EXPORT-<br>ING COUNTRIES | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds   | 1,000<br>pounds |
| United States.....                 | 1,394,589       | 196,587         | 910,992         | 40,355          | 640,889         | 38,790          | 760,478           | 57,811          |
| Russia.....                        | 672,830         | 0               | 724,454         | 0               | 952,118         | 0               | 905,013           | 0               |
| British India.....                 | 584,664         | 246             | 612,556         | 78              | 656,528         | 40              | 648,930           | 22              |
| Egypt.....                         | 356,706         | 3               | 416,278         | 0               | 411,634         | 0               | 242,679           | 4,544           |
| France.....                        | 336,094         | 75,294          | 461,486         | 170,810         | 372,931         | 234,852         | 359,525           | 243,826         |
| China.....                         | 270,571         | 0               | 274,466         | 0               | 132,973         | 0               | 239,436           | 0               |
| Italy.....                         | 242,957         | 603             | 259,043         | 931             | 173,797         | 6,350           | 175,845           | 3,116           |
| Rumania.....                       | \$147,111       | \$7             | 190,515         | 163             | 135,731         | 0               | 195,134           | 0               |
| Argentina.....                     | 139,227         | 0               | 199,530         | 0               | 214,871         | 0               | 163,908           | 0               |
| Netherlands Indies.....            | 135,473         | 0               | 168,550         | 0               | 156,245         | 0               | 56,140            | 0               |
| Peru.....                          | 70,465          | 0               | 79,112          | 0               | 69,552          | 0               | 74,615            | 0               |
| Brazil.....                        | 54,650          | 0               | 76,364          | 0               | 88,510          | 0               | 12,196            | 9,644           |
| Canada.....                        | 45,464          | 15,863          | 29,817          | 9,202           | 23,307          | 6,743           | 56,021            | 0               |
| Bulgaria.....                      | 37,520          | 10              | 77,414          | 30              | 67,264          | 11              | 5,599             | 7,617           |
| Spain.....                         | 28,199          | 3,754           | 5,096           | 18,120          | 2,147           | 16,229          | 35,502            | 13,120          |
| British Malaya.....                | 14,301          | 11,530          | 13,512          | 11,487          | 18,240          | 12,031          | 10,691            | 0               |
| Chile.....                         | 7,725           | 1               | 5,490           | 0               | 7,841           | 0               | 22,614            | 16              |
| Australia <sup>4</sup> .....       | 6,921           | 2,404           | 12,088          | 262             | 23,219          | 8               | 1,777             | 701             |
| Latvia.....                        | 4,355           | 0               | 2,393           | 1,360           | 1,735           | 223             | 754               | 1,350           |
| Estonia.....                       | 1,169           | 3,694           | 3,162           | 647             | 942             | 350             |                   |                 |
| Total.....                         | 4,550,991       | 309,996         | 4,522,332       | 253,446         | 4,200,474       | 315,627         | 3,966,907         | 341,767         |
| PRINCIPAL IMPORT-<br>ING COUNTRIES |                 |                 |                 |                 |                 |                 |                   |                 |
| Denmark.....                       | 26,788          | 1,558,619       | 40,536          | 1,547,206       | 69,465          | 1,127,958       | 62,167            | 1,151,603       |
| Germany.....                       | 768,849         | 1,064,314       | 440,636         | 1,129,400       | 125,970         | 1,349,844       | 81,107            | 951,526         |
| United Kingdom.....                | 167,379         | 1,001,966       | 162,670         | 950,569         | 156,444         | 921,614         | 84,995            | 849,930         |
| Netherlands.....                   | 120,322         | 680,253         | 171,637         | 536,139         | 144,979         | 369,123         | 75,132            | 659,765         |
| Japan.....                         | 43,218          | 346,886         | 26,577          | 322,589         | 29,636          | 250,846         | 41,306            | 285,313         |
| Belgium.....                       | 33,170          | 324,675         | 123,706         | 466,498         | 133,743         | 432,928         | 145,508           | 558,967         |
| Sweden.....                        | 12,655          | 305,454         | 23,704          | 393,639         | 26,462          | 250,590         | 27,581            | 251,623         |
| Finland.....                       | 0               | 183,687         | 0               | 95,788          | 0               | 66,399          | 0                 | 143,686         |
| Irish Free State.....              | 0               | 111,617         | 0               | 127,082         | 0               | 107,678         | 0                 | 63,215          |
| Czechoslovakia.....                | 54,113          | 76,079          | 68,653          | 136,489         | 63,096          | 82,121          | 49,976            | 84,423          |
| Switzerland.....                   | 13,977          | 75,127          | 22,733          | 60,246          | 12,649          | 76,780          | 9,842             | 39,778          |
| Norway.....                        | 984             | 63,263          | 1,962           | 99,389          | 9,613           | 35,633          | 10,963            | 34,143          |
| Poland.....                        | 28,545          | 56,356          | 26,069          | 35,037          | 42,729          | 25,591          | 49,347            | 12,359          |
| Ceylon.....                        | 25,252          | 42,690          | 41,511          | 29,670          | 48,575          | 28,925          | 57,011            | 30,119          |
| Austria.....                       | 1,411           | 31,822          | 926             | 46,482          | 45              | 52,259          | 571               | 49,628          |
| Hungary.....                       | 15,310          | 16,411          | 18,617          | 36,763          | 8,331           | 20,449          | 14,904            | 7,120           |
| Total.....                         | 1,361,973       | 5,939,319       | 1,169,887       | 6,042,986       | 871,737         | 5,198,738       | 690,410           | 5,173,198       |

<sup>1</sup> Preliminary.<sup>2</sup> Does not include figures for Manchuria after June 1932.<sup>3</sup> 4-year average.<sup>4</sup> Java and Madura only.<sup>5</sup> Year ended June 30.<sup>6</sup> Includes some soybean cake and meal.

Bureau of Agricultural Economics; official sources.

The class called here "Oil cake and oil-cake meal" includes the edible cake and meal remaining after making oil from such products as cottonseed, flaxseed, peanuts, corn, etc. Soybean cake is not included in this table.

TABLE 452.—*Vegetable oils: Exports from the United States, 1909-10 to 1933-34*

| Year beginning July  | Corn         | Cotton-seed <sup>1</sup> | Linseed      | Cocoa butter        | Coconut              | Peanut             | Soybean             |
|----------------------|--------------|--------------------------|--------------|---------------------|----------------------|--------------------|---------------------|
|                      | 1,000 pounds | 1,000 pounds             | 1,000 pounds | 1,000 pounds        | 1,000 pounds         | 1,000 pounds       | 1,000 pounds        |
| 1909-10              | 11,299       | 223,955                  | 1,713        |                     |                      |                    |                     |
| 1910-11              | 25,371       | 225,521                  | 1,314        |                     |                      |                    |                     |
| 1911-12              | 28,866       | 399,471                  | 1,852        |                     |                      |                    |                     |
| 1912-13              | 19,839       | 315,233                  | 13,004       |                     |                      |                    |                     |
| 1913-14              | 18,282       | 192,963                  | 1,794        |                     |                      |                    |                     |
| 1914-15              | 17,790       | 318,367                  | 9,091        |                     |                      |                    |                     |
| 1915-16              | 8,968        | 266,512                  | 5,356        |                     |                      |                    |                     |
| 1916-17              | 8,780        | 158,912                  | 9,012        |                     |                      |                    |                     |
| 1917-18              | 1,831        | 100,780                  | 8,909        |                     |                      |                    |                     |
| 1918-19              | 1,095        | 178,709                  | 8,222        |                     |                      |                    |                     |
| 1919-20              | 12,483       | 159,400                  | 8,523        | <sup>2</sup> 11,048 | <sup>2</sup> 141,088 | <sup>2</sup> 4,922 | <sup>2</sup> 67,782 |
| 1920-21              | 6,919        | 283,268                  | 4,210        | 3,171               | 6,639                | 1,595              | 5,118               |
| 1921-22              | 5,280        | 91,615                   | 2,744        | 1,856               | 10,185               | 1,802              | 537                 |
| 1922-23              | 5,224        | 64,292                   | 3,105        | 967                 | 12,993               | 188                | 2,495               |
| 1923-24              | 4,196        | 39,418                   | 2,628        | 888                 | 19,423               | 168                | 2,892               |
| 1924-25              | 3,586        | 53,261                   | 2,405        | 1,577               | 17,890               | ( <sup>3</sup> )   | 579                 |
| 1925-26              | 2,927        | 59,015                   | 2,335        | 1,766               | 15,444               |                    | 623                 |
| 1926-27              | 405          | 57,530                   | 2,738        | 290                 | 19,826               |                    | 3,104               |
| 1927-28              | 329          | 61,470                   | 2,221        | 1,897               | 22,358               |                    | 7,514               |
| 1928-29              | 323          | 29,531                   | 2,020        | 1,010               | 24,556               |                    | 8,241               |
| 1929-30              | 363          | 31,998                   | 2,129        | 347                 | 30,225               |                    | 5,509               |
| 1930-31              | 915          | 26,353                   | 1,298        | 463                 | 19,963               |                    | 4,410               |
| 1931-32              | 774          | 40,985                   | 873          | 321                 | 22,083               |                    | 3,649               |
| 1932-33              | 901          | 44,427                   | 781          | 1,424               | 25,410               |                    | 2,209               |
| 1933-34 <sup>4</sup> | 1,562        | 23,189                   | 696          | 3,557               | 21,678               |                    | 1,676               |

<sup>1</sup> Crude and refined not separately reported 1909-10 to 1920-21; from 1921-22 to date the crude and refined figures have been added without converting.

<sup>2</sup> Not separately reported prior to July 1919.

<sup>3</sup> Included with "Other vegetable oils and fats", 1924-25 to date.

<sup>4</sup> Preliminary.

Bureau of Agricultural Economics; compiled from Foreign Commerce and Navigation of the United States, 1910-18; Monthly Summary of Foreign Commerce of the United States, June issues, 1919-34.

TABLE 453.—*Vegetable oils: Imports into the United States, 1909-10 to 1933-34*

| Year beginning July  | Castor <sup>1</sup>    | Tung      | Cocoa butter     | Coconut          | Cotton-seed <sup>1</sup> | Linseed          | Olive     | Palm      | Palm kernel      | Peanut           | Pe-rilla <sup>2</sup> | Rape-seed | Soy-bean         |
|----------------------|------------------------|-----------|------------------|------------------|--------------------------|------------------|-----------|-----------|------------------|------------------|-----------------------|-----------|------------------|
|                      | 1,000 lb.              | 1,000 lb. | 1,000 lb.        | 1,000 lb.        | 1,000 lb.                | 1,000 lb.        | 1,000 lb. | 1,000 lb. | 1,000 lb.        | 1,000 lb.        | 1,000 lb.             | 1,000 lb. | 1,000 lb.        |
| 1909-10              | 59 <sup>3</sup> 43,200 |           | 3,370            | 48,346           | ( <sup>4</sup> )         | ( <sup>4</sup> ) | 34,089    | 92,772    | ( <sup>4</sup> ) | ( <sup>4</sup> ) |                       | 8,122     | ( <sup>4</sup> ) |
| 1910-11              | 57 <sup>3</sup> 62,815 |           | 4,279            | 51,118           | ( <sup>4</sup> )         | ( <sup>4</sup> ) | 37,382    | 57,100    | ( <sup>4</sup> ) | ( <sup>4</sup> ) |                       | 10,222    | ( <sup>4</sup> ) |
| 1911-12              | 56                     | 36,767    | 6,075            | 46,371           | 1,513                    | 5,529            | 41,044    | 47,159    | 25,393           | 6,717            |                       | 8,872     | 28,021           |
| 1912-13              | 42                     | 44,975    | 3,603            | 50,804           | 3,384                    | 1,303            | 43,803    | 50,229    | 23,569           | 8,968            |                       | 11,623    | 12,340           |
| 1913-14              | 1,513                  | 36,993    | 2,539            | 74,386           | 17,293                   | 1,442            | 52,361    | 58,040    | 34,328           | 10,029           |                       | 10,982    | 16,360           |
| 1914-15              | 504                    | 37,052    | 150              | 63,135           | 15,162                   | 4,015            | 55,230    | 31,438    | 4,906            | 6,397            |                       | 69        | 11,240           |
| 1915-16              | 2,025                  | 37,262    | 400              | 86,008           | 17,181                   | 376              | 60,520    | 49,497    | 6,761            | 11,093           |                       | 66        | 19,209           |
| 1916-17              | 2,590                  | 51,491    | 166              | 79,223           | 13,703                   | 831              | 61,381    | 56,074    | 1,357            | 22,696           |                       | 449       | 8,137            |
| 1917-18              | 9,401                  | 96,118    | ( <sup>5</sup> ) | 259,195          | 14,291                   | 381              | 19,889    | 27,405    | 19               | 62,166           | 1,016                 | 22,928    | 336,620          |
| 1918-19              | 3,778                  | 46,625    |                  | 3,844,728        | 20,410                   | 7,424            | 32,983    | 19,251    | 1,945            | 35,445           |                       | 15,832    | 236,805          |
| 1919-20              | 2,171                  | 79,602    |                  | 42,271,540       | 24,165                   | 34,128           | 52,716    | 50,165    | 54               | 165,433          |                       | 9,221     | 195,774          |
| 1920-21              | 792                    | 33,900    |                  | 915,173,889      | 1,315                    | 14,974           | 35,283    | 31,076    | 2,769            | 18,193           |                       | 8,789     | 49,331           |
| 1921-22              | 366                    | 55,672    |                  | 7,123,330,236    | ( <sup>4</sup> )         | 163,705          | 83,337    | 39,159    |                  | 2,878            |                       | 10,139    | 8,283            |
| 1922-23              | 1,398                  | 89,392    |                  | 3,010,212,573    | ( <sup>4</sup> )         | 56,764           | 117,262   | 118,816   |                  | 7,553            |                       | 13,274    | 38,035           |
| 1923-24              | 271                    | 80,898    |                  | 1,169,181,230    | 0                        | 17,840           | 113,409   | 86,784    | 1,126            | 15,061           |                       | 15,691    | 17,631           |
| 1924-25              | 308                    | 94,695    |                  | 733,250,121      | 0                        | 23,587           | 118,071   | 114,387   | 37,364           | 3,510            |                       | 14,691    | 20,434           |
| 1925-26              | 494                    | 84,361    |                  | 14,200,878       | 283                      | 16,733           | 137,757   | 152,254   | 85,074           | 3,372            |                       | 15,658    | 17,401           |
| 1926-27              | 164,102,428            |           | 256,286,776      | 6,396            | 1,331                    | 134,729          | 110,184   | 14,760    | 7,950            |                  |                       | 20,480    | 23,563           |
| 1927-28              | 934                    | 83,628    |                  | 18,273,809       | 1                        | 346              | 118,093   | 183,977   | 56,021           | 4,859            | 2,289                 | 19,530    | 14,562           |
| 1928-29              | 130,115,240            |           | 17,377,288       | ( <sup>5</sup> ) | 2                        | 6,677            | 147,794   | 228,290   | 80,514           | 3,406            | 5,791                 | 10,071    | 17,172           |
| 1929-30              | 122,130,942            |           | 270,370,600      | 0                | 5                        | 4,165            | 158,618   | 237,860   | 41,380           | 1,964            | 9,204                 | 16,137    | 13,333           |
| 1930-31              | 125                    | 99,402    |                  | 15,819,942       | 1                        | 256              | 126,202   | 313,940   | 17,197           | 21,163           | 9,652                 | 14,479    | 5,915            |
| 1931-32              | 764                    | 81,346    |                  | 12,297,083       | 0                        | 28               | 137,556   | 221,155   | 9,313            | 9,320            | 12,436                | 8,641     | 3,085            |
| 1932-33              | 1,130                  | 83,858    |                  | 13,260,700       | 0                        | 36               | 125,159   | 253,638   | 6,000            | 1,209            | 21,373                | 7,676     | 1                |
| 1933-34 <sup>4</sup> | 796                    | 118,797   |                  | 9,353,105        | 0                        | 10,680           | 103,944   | 243,456   | 16,384           | 1,218            | 32,898                | 13,031    | 2,512            |

<sup>1</sup> Imports for consumption. (See introduction to Agricultural Statistics.)

<sup>2</sup> Not separately reported prior to 1914-15; 1914-15 to 1917-18 and 1927-28 are imports for consumption; 1918-19 to 1926-27 not available; 1928-29 to 1932-33 are general imports.

<sup>3</sup> Includes peanut oil.

<sup>4</sup> Included in all other fixed or expressed.

<sup>5</sup> Included in tung oil.

<sup>6</sup> Includes hempseed.

<sup>7</sup> Less than 500 pounds.

<sup>8</sup> Preliminary.

Bureau of Agricultural Economics; compiled from Foreign Commerce and Navigation of the United States, 1910-18; Monthly Summary of Foreign Commerce of the United States, June issues, 1919-34.



TABLE 454.—*Copra and coconut oil: International trade, average 1925-29, annual 1931-33*

## COPRA

| Country  | Calendar year   |                 |                 |                 |                 |                 |                   |                 |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-----------------|
|  | Average 1925-29 |                 | 1931            |                 | 1932            |                 | 1933 <sup>1</sup> |                 |
|  | Exports         | Imports         | Exports         | Imports         | Exports         | Imports         | Exports           | Imports         |
| PRINCIPAL EXPORT-<br>ING COUNTRIES               | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds   | 1,000<br>pounds |
| Netherlands Indies.....                          | 851,367         | 6               | 794,034         | 323             | 1,058,098       | 156             | 1,311,939         | 20              |
| Philippine Islands.....                          | 409,191         | 1,017           | 384,128         | 710             | 302,561         | 314             | 680,678           |                 |
| British Malaya.....                              | 386,704         | 169,135         | 420,760         | 194,938         | 442,216         | 223,897         | 471,710           | 224,094         |
| Ceylon.....                                      | 239,555         | 502             | 210,268         | 326             | 102,367         | 293             | 144,121           |                 |
| Fiji.....  | 62,601          | 0               | 37,894          | 0               | 33,770          | 0               | 50,617            |                 |
| Solomon Islands <sup>2</sup> .....               | 48,372          | 0               | 47,808          | 0               | 49,853          | 0               |                   |                 |
| Mozambique.....                                  | 40,469          | 0               | 48,395          | 0               | 54,366          | 0               |                   |                 |
| Zanzibar.....                                    | 38,278          | 11,050          | 20,835          | 115             | 26,440          | 217             | 27,328            | 0               |
| Tonga.....                                       | 32,048          | 0               | 20,001          | 0               | 18,644          | 0               |                   | 0               |
| Samoa, West.....                                 | 30,179          | 0               | 24,779          | 0               |                 | 0               |                   | 0               |
| Tanganyika.....                                  | 17,685          | 0               | 16,204          | 0               | 16,274          | 0               |                   | 0               |
| Trinidad and Tobago.....                         | 16,331          | 1,193           | 19,435          | 1,555           | 15,419          | 1,802           | 19,368            | 1,961           |
| Gilbert and Ellice<br>Islands <sup>4</sup> ..... | 10,482          | 0               | 14,668          | 0               | 15,042          | 0               |                   | 0               |
| Total.....                                       | 2,181,262       | 182,903         | 2,064,467       | 197,967         | 2,135,050       | 226,679         | 1,425,751         | 226,055         |
| PRINCIPAL IMPORT-<br>ING COUNTRIES               |                 |                 |                 |                 |                 |                 |                   |                 |
| United States.....                               | 0               | 469,115         | 0               | 457,947         | 0               | 453,447         | 0                 | 660,872         |
| Germany.....                                     | 777             | 442,523         | 27              | 319,944         | 188             | 288,007         | 1,793             | 267,157         |
| France.....                                      | 145             | 364,155         | 158             | 430,806         | 100             | 389,501         | 38                | 440,026         |
| Netherlands.....                                 | 791             | 309,530         | 360             | 191,077         | 517             | 138,664         | 269               | 94,293          |
| United Kingdom.....                              | 0               | 124,434         | 0               | 180,333         | 0               | 215,024         | 0                 | 228,693         |
| Denmark.....                                     | 0               | 122,840         | 0               | 156,663         | 0               | 165,731         | 0                 | 159,013         |
| Australia <sup>3</sup> .....                     | 0               | 71,419          | 0               | 25,058          | 0               | 27,208          | 0                 |                 |
| Italy.....                                       | 9               | 61,352          | 17              | 74,598          | 10              | 81,332          | 6                 | 86,072          |
| Norway.....                                      | 0               | 43,598          | 0               | 69,519          | 0               | 75,211          | 0                 | 75,539          |
| Austria.....                                     | 6               | 28,765          | 0               | 14,822          | 0               | 15,886          | 0                 | 19,670          |
| Sweden.....                                      | 0               | 24,518          | 0               | 11,931          | 0               | 11,460          | 0                 | 41,044          |
| Belgium.....                                     | 113             | 18,169          | 203             | 11,944          | 212             | 9,157           | 30                | 14,548          |
| Latvia.....                                      | 0               | 3,496           | 0               | 3,239           | 0               | 4,951           | 0                 | 5,038           |
| British India.....                               | 1,284           | 2,926           | 114             | 2,453           | 52              | 33,083          | 87                | 59,123          |
| Total.....                                       | 3,125           | 2,085,810       | 879             | 1,940,334       | 1,079           | 1,908,762       | 2,223             | 2,151,088       |

## COCONUT OIL

|                                    |         |         |         |         |         |         |         |         |
|------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| PRINCIPAL EXPORT-<br>ING COUNTRIES |         |         |         |         |         |         |         |         |
| Philippine Islands.....            | 308,196 | 0       | 363,693 | 0       | 252,808 | 0       | 351,900 | 0       |
| Netherlands.....                   | 121,614 | 9,639   | 87,578  | 4,584   | 69,937  | 12,805  | 52,967  | 11,571  |
| Ceylon.....                        | 78,807  | 13      | 107,831 | 11      | 114,804 | 8       | 118,876 |         |
| Netherlands Indies.....            | 42,689  | 10,562  | 9,625   | 11,309  | 35,900  | 8,900   | 16,179  |         |
| Germany.....                       | 33,181  | 11,254  | 19,796  | 14,899  | 7,794   | 21,801  | 2,847   | 7,467   |
| France.....                        | 29,644  | 10,076  | 16,221  | 11,385  | 13,892  | 16,951  | 9,587   | 22,715  |
| British Malaya.....                | 20,223  | 58      | 22,756  | 560     | 27,747  | 1,019   | 41,747  | 2,395   |
| Australia <sup>3</sup> .....       | 398     | 250     | 472     | 5       | 3,962   | 0       |         |         |
| Total.....                         | 634,752 | 41,852  | 627,972 | 42,753  | 526,844 | 61,482  | 594,138 | 44,148  |
| PRINCIPAL IMPORT-<br>ING COUNTRIES |         |         |         |         |         |         |         |         |
| United States.....                 | 21,691  | 294,849 | 18,083  | 325,175 | 23,558  | 249,117 | 26,168  | 316,078 |
| United Kingdom.....                | 7,473   | 105,560 | 6,738   | 96,385  | 6,229   | 56,134  | 7,548   | 29,901  |
| Belgium <sup>4</sup> .....         | 5,924   | 34,156  | 5,812   | 16,398  | 5,800   | 14,526  | 4,693   | 10,326  |
| Sweden.....                        | 3,365   | 32,663  | 901     | 41,295  | 325     | 45,836  | 7,895   | 35,855  |
| Denmark.....                       | 25,414  | 27,069  | 43,379  | 15,394  | 58,621  | 6,061   | 49,624  | 8,379   |
| British India.....                 | 1,037   | 12,054  | 371     | 21,178  | 236     | 65,889  | 306     | 57,432  |
| Egypt.....                         | 1       | 11,470  | 0       | 3,625   | 1       | 3,106   | 0       | 4,110   |
| Italy.....                         | 102     | 8,724   | 76      | 3,882   | 75      | 2,026   | 11      | 2,870   |
| Rumania.....                       | 1       | 1,623   | 5       | 1,184   | 0       | 482     |         |         |
| New Zealand.....                   | 0       | 896     | 0       | 1,042   | 0       | 1,110   | 0       | 1,173   |
| Canada.....                        | 0       | 739     | 0       | 1,737   | 0       | 2,410   | 0       | 2,651   |
| Total.....                         | 65,008  | 529,703 | 74,865  | 527,695 | 94,845  | 446,697 | 96,245  | 468,755 |

<sup>1</sup> Preliminary.<sup>2</sup> Java and Madura only.<sup>3</sup> International Yearbook of Agricultural Statistics.<sup>4</sup> Year ended June 30.<sup>5</sup> Includes some other oils.<sup>6</sup> 4-year average.

Bureau of Agricultural Economics; official sources except where otherwise noted.

## FOREIGN TRADE IN AGRICULTURAL PRODUCTS

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TABLE 455.—*Rubber: International trade, average 1925-29, annual 1931-33*

| Country                           | Calendar year       |                     |                     |                     |                     |                     |                     |                     |
|-----------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                                   | Average 1925-29     |                     | 1931                |                     | 1932                |                     | 1933 <sup>1</sup>   |                     |
|                                   | Exports             | Imports             | Exports             | Imports             | Exports             | Imports             | Exports             | Imports             |
| PRINCIPAL EXPORTING COUNTRIES     | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> | <i>1,000 pounds</i> |
| British Malaya.....               | 931,522             | 362,113             | 1,162,535           | 280,972             | 1,069,623           | 207,303             | 1,295,227           | 374,923             |
| Netherlands Indies.....           | 593,755             | 0                   | 653,125             | 0                   | 533,031             | 0                   | 165,530             | 0                   |
| Ceylon.....                       | 133,621             | 11,137              | 138,005             | 6,991               | 111,242             | 3,854               | 142,317             | 4,653               |
| Brazil.....                       | 46,638              | 0                   | 23,096              | 0                   | 11,195              | 0                   | 20,840              | 0                   |
| British India.....                | 23,532              | 100                 | 18,999              | 369                 | 8,733               | 306                 | 10,144              | 1,141               |
| Indo-China.....                   | 20,509              | 29                  | 28,237              | 106                 | 32,202              | 115                 | 87,899              | 0                   |
| British North Borneo.....         | 14,419              | 0                   | 13,994              | 0                   | 12,048              | 0                   | 0                   | 0                   |
| Mexico.....                       | 8,440               | 565                 | 0                   | 1,596               | 0                   | 1,920               | 0                   | 4,424               |
| Bolivia.....                      | 7,474               | 1                   | 3,983               | 0                   | 1,692               | 0                   | 0                   | 0                   |
| Nigeria.....                      | 3,947               | 0                   | 4,080               | 0                   | 1,463               | 0                   | 0                   | 0                   |
| Kamerun <sup>2</sup> .....        | 3,818               | 1                   | 1,935               | 0                   | 579                 | 0                   | 0                   | 0                   |
| French Equatorial Africa.....     | 3,242               | 211                 | 1,834               | 0                   | 841                 | 0                   | 0                   | 0                   |
| Belgian Congo.....                | 2,230               | 1                   | 550                 | 0                   | 203                 | 22                  | 0                   | 0                   |
| French Guinea.....                | 2,046               | 30                  | 371                 | 3                   | 350                 | 0                   | 0                   | 0                   |
| Switzerland.....                  | 1,939               | 1,155               | 2,104               | 1,893               | 1,832               | 1,372               | 2,477               | 1,796               |
| Ecuador.....                      | 1,756               | 0                   | 4                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Gold Coast.....                   | 889                 | 0                   | 221                 | 0                   | 24                  | 0                   | 52                  | 0                   |
| Peru.....                         | 526                 | 0                   | 81                  | 0                   | 67                  | 0                   | 207                 | 0                   |
| Angola.....                       | 179                 | 0                   | 11                  | 0                   | 0                   | 0                   | 0                   | 0                   |
| Total.....                        | 1,800,482           | 375,343             | 2,051,170           | 291,930             | 1,786,175           | 214,892             | 1,674,093           | 386,338             |
| PRINCIPAL IMPORTING COUNTRIES     |                     |                     |                     |                     |                     |                     |                     |                     |
| United States.....                | 0                   | 1,002,031           | 0                   | 1,124,003           | 0                   | 928,857             | 0                   | 935,340             |
| United Kingdom.....               | 0                   | 124,052             | 0                   | 190,818             | 0                   | 97,577              | 0                   | 164,181             |
| France.....                       | 16,049              | 106,453             | 2,421               | 105,591             | 1,394               | 91,079              | 2,456               | 156,576             |
| Germany.....                      | 6,051               | 87,825              | 11,551              | 99,330              | 5,336               | 106,181             | 7,117               | 128,345             |
| Canada.....                       | 0                   | 59,580              | 0                   | 56,583              | 0                   | 46,854              | 0                   | 43,289              |
| Japan.....                        | 0                   | 50,307              | 0                   | 97,548              | 0                   | 125,974             | 0                   | 154,172             |
| Italy.....                        | 351                 | 27,855              | 24                  | 22,613              | 28                  | 34,273              | 109                 | 43,463              |
| Russia.....                       | 0                   | 23,145              | 0                   | 62,192              | 0                   | 67,679              | 0                   | 68,711              |
| Belgium.....                      | 2,719               | 16,271              | 5,037               | 29,774              | 4,812               | 26,081              | 8,935               | 33,948              |
| Spain.....                        | 19                  | 13,958              | 50                  | 15,334              | 0                   | 24,826              | 0                   | 17,412              |
| Netherlands.....                  | 6,267               | 10,561              | 4,445               | 9,440               | 4,448               | 10,823              | 6,218               | 9,005               |
| Austria.....                      | 1,283               | 7,269               | 2,133               | 8,901               | 1,922               | 6,384               | 789                 | 6,997               |
| Sweden.....                       | 144                 | 5,420               | 66                  | 8,738               | 151                 | 9,730               | 86                  | 9,356               |
| Czechoslovakia <sup>3</sup> ..... | 278                 | 5,348               | 776                 | 18,060              | 1,285               | 22,483              | 0                   | 0                   |
| Hungary.....                      | 213                 | 2,291               | 185                 | 3,241               | 100                 | 2,935               | 5                   | 3,439               |
| Denmark.....                      | 4                   | 1,341               | 0                   | 2,136               | 0                   | 2,006               | 0                   | 4,062               |
| China.....                        | 0                   | 1,016               | 0                   | 6,774               | 0                   | 10,561              | 0                   | 12,807              |
| Total.....                        | 33,376              | 1,544,723           | 26,688              | 1,861,574           | 9,476               | 1,614,316           | 25,715              | 1,794,123           |

<sup>1</sup> Preliminary.<sup>2</sup> Java and Madura only.<sup>3</sup> International Yearbook of Agricultural Statistics.<sup>4</sup> 2-year average.<sup>5</sup> Does not include Manchuria after June 30, 1932.

Bureau of Agricultural Economics; official sources except where otherwise noted.

Figures for rubber include "India rubber", so called, caoutchouc, caucho, jebe (Peru), hule (Mexico), borracha, massaranduba, mangabeira, manicoba, sorva, and seringa (Brazil), gamelastiek (Netherlands Indies), caura, ser nambi (Venezuela).

TABLE 456.—*Coffee: International trade, average 1925-29, annual 1931-33*

| Country                            | Average 1925-29 |                 | 1931            |                 | 1932            |                 | 1933 <sup>1</sup> |                 |
|------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-----------------|
|                                    | Exports         | Imports         | Exports         | Imports         | Exports         | Imports         | Exports           | Imports         |
| PRINCIPAL EXPORT-<br>ING COUNTRIES | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds   | 1,000<br>pounds |
| Brazil.....                        | 1,865,392       | 0               | 2,361,317       | 0               | 1,578,758       | 0               | 2,044,855         | 0               |
| Colombia.....                      | 324,198         | 2 5             | 401,269         | 3               | 421,376         | 2               | —                 | —               |
| Netherlands Indies.....            | 187,523         | 3,035           | 151,634         | 5,012           | 250,880         | 1,635           | 348,824           | 330             |
| Venezuela.....                     | 118,217         | 0               | 123,550         | 0               | 108,517         | 0               | 75,282            | 0               |
| Guatemala.....                     | 100,915         | 0               | 80,174          | 0               | —               | 0               | —                 | 0               |
| Salvador.....                      | 96,466          | 0               | 120,439         | 20              | 87,423          | 10              | —                 | 0               |
| Haiti.....                         | 72,395          | 0               | 57,960          | 0               | 58,076          | 0               | —                 | 0               |
| Mexico.....                        | 58,789          | 422             | 60,210          | 175             | 44,197          | 136             | 90,952            | 46              |
| Costa Rica.....                    | 38,946          | 0               | 50,739          | 0               | 40,783          | 0               | 61,239            | 0               |
| Nicaragua.....                     | 30,645          | 0               | 34,934          | 118             | 17,918          | 105             | 30,212            | 31              |
| British India.....                 | 22,540          | 4,662           | 21,019          | 1,941           | 19,186          | 139             | 19,467            | 0               |
| Tanganyika.....                    | 17,217          | 45              | 20,722          | 16              | 25,451          | 6               | —                 | —               |
| Dominican Republic.....            | 9,311           | 0               | 11,306          | 0               | 14,137          | 0               | 26,001            | 0               |
| Jamaica.....                       | 8,729           | 0               | 9,177           | 0               | 8,877           | 0               | 9,824             | 0               |
| Total.....                         | 2,951,283       | 8,169           | 3,504,450       | 7,265           | 2,675,579       | 2,023           | 2,406,656         | 107             |
| PRINCIPAL IMPORTING<br>COUNTRIES   |                 |                 |                 |                 |                 |                 |                   |                 |
| United States.....                 | 17,669          | 1,428,825       | 7,211           | 1,741,536       | 4,797           | 1,501,126       | 7,113             | 1,586,254       |
| France.....                        | 219             | 360,039         | 66              | 427,712         | 112             | 412,166         | 183               | 433,061         |
| Germany.....                       | 365             | 266,650         | 2,195           | 345,082         | 1,410           | 287,337         | 641               | 286,529         |
| Netherlands.....                   | 36,978          | 113,722         | 14,895          | 103,515         | 19,005          | 102,882         | 13,498            | 121,188         |
| Italy.....                         | 4               | 99,761          | 23              | 96,638          | 41              | 89,885          | 88                | 86,627          |
| Sweden.....                        | 25              | 90,654          | 119             | 116,616         | 95              | 85,165          | 119               | 99,378          |
| Belgium.....                       | 890             | 88,285          | 10,232          | 134,937         | 3,901           | 113,574         | 119               | 87,589          |
| Denmark.....                       | 504             | 53,588          | 716             | 66,383          | 515             | 54,880          | 69                | 58,991          |
| Argentina.....                     | 0               | 51,666          | 0               | 50,555          | 0               | 38,712          | 0                 | 51,351          |
| Spain.....                         | 4               | 48,120          | 0               | 48,875          | 0               | 48,528          | 0                 | 53,807          |
| United Kingdom.....                | 235             | 40,698          | 204             | 39,387          | 183             | 47,313          | —                 | 36,749          |
| Finland.....                       | 0               | 36,922          | 0               | 30,983          | 0               | 29,980          | 0                 | 35,077          |
| Norway.....                        | 0               | 35,572          | 0               | 40,315          | 0               | 34,578          | 0                 | 36,042          |
| Czechoslovakia.....                | 3               | 29,068          | 0               | 33,446          | 0               | 33,769          | 0                 | 20,602          |
| Union of South Africa.....         | 13              | 28,306          | 13              | 31,694          | 5               | 24,635          | 2                 | 28,594          |
| Switzerland.....                   | 201             | 27,926          | 720             | 34,150          | 769             | 44,324          | 500               | 25,992          |
| Canada.....                        | 57              | 25,811          | 44              | 32,917          | 43              | 31,162          | 51                | 34,066          |
| Algeria.....                       | 59              | 21,971          | 2               | 30,453          | —               | 30,312          | —                 | 31,036          |
| Yugoslavia.....                    | 5               | 21,180          | 0               | 19,671          | 0               | 15,289          | 0                 | 14,670          |
| Egypt.....                         | 11              | 19,953          | 1               | 16,627          | 0               | 16,443          | 0                 | 18,812          |
| Cuba.....                          | 1               | 19,382          | 1               | 1,873           | 13,424          | 324             | —                 | —               |
| Austria.....                       | 6               | 18,368          | 5               | 21,644          | 1               | 16,551          | 1                 | 11,295          |
| British Malaya.....                | 9,010           | 17,046          | 5,210           | 12,169          | 5,285           | 11,720          | 5,815             | 13,775          |
| Poland.....                        | 6               | 15,819          | 6               | 17,986          | 2               | 15,379          | 2                 | 16,683          |
| Chile.....                         | 21              | 14,385          | 34              | 10,626          | 12              | 7,366           | —                 | 2,640           |
| Greece.....                        | 0               | 11,544          | 1               | 14,459          | 10              | 9,407           | —                 | 10,220          |
| Hungary.....                       | 0               | 7,459           | 4               | 7,280           | 0               | 5,718           | 0                 | 4,965           |
| Ceylon.....                        | 8               | 2,858           | 13              | 4,214           | 7               | 2,280           | —                 | 3,060           |
| Bulgaria.....                      | 0               | 1,874           | 0               | 1,503           | 0               | 1,342           | 0                 | 1,073           |
| Total.....                         | 66,354          | 2,998,452       | 41,715          | 3,533,246       | 49,607          | 3,112,116       | 28,201            | 3,210,126       |

<sup>1</sup> Preliminary.<sup>2</sup> International Yearbook of Agricultural Statistics.<sup>3</sup> Java and Madura only.<sup>4</sup> Raw, only.<sup>5</sup> Includes a small amount of surrogate.

Bureau of Agricultural Economics; official sources except where otherwise noted.

The item "coffee" comprises unhulled and hulled, ground or otherwise prepared, but imitation or "surrogate" coffee and chicory are excluded.

TABLE 457.—*Tea: International trade, average 1925-29, annual 1930-33*

| Country                            | Calendar year      |                 |                 |                 |                 |                 |                 |                 |                   |                 |
|------------------------------------|--------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-----------------|
|                                    | Average<br>1925-29 |                 | 1930            |                 | 1931            |                 | 1932            |                 | 1933 <sup>1</sup> |                 |
|                                    | Exports            | Imports         | Exports         | Imports         | Exports         | Imports         | Exports         | Imports         | Exports           | Imports         |
| PRINCIPAL EXPORT-<br>ING COUNTRIES | 1,000<br>pounds    | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds   | 1,000<br>pounds |
| British India.....                 | 364,848            | 8,260           | 365,344         | 8,660           | 351,283         | 7,597           | 375,236         | 5,536           | 336,962           | 5,163           |
| Ceylon.....                        | 228,445            | 1               | 243,021         | 1               | 243,970         | 1               | 252,824         | 1               | 216,061           |                 |
| Netherlands Indies.....            | 124,947            | 8,434           | 137,573         | 8,472           | 152,095         | 6,965           | 154,256         | 4,200           | 116,647           | 2,186           |
| China.....                         | 116,800            | 8,214           | 91,368          | 3,028           | 92,591          | 4,421           | 86,535          | 1,493           | 88,993            | 418             |
| Japan.....                         | 24,631             | 1,009           | 20,316          | 1,152           | 25,410          | 1,233           | 29,535          | 878             | 29,493            | 745             |
| Formosa.....                       | 20,431             | 66              | 17,619          | 86              | 17,389          | 95              | 14,065          | 35              |                   |                 |
| Total.....                         | 879,602            | 25,984          | 875,231         | 21,399          | 882,738         | 20,312          | 912,451         | 12,193          | 788,146           | 8,512           |
| PRINCIPAL IMPORT-<br>ING COUNTRIES |                    |                 |                 |                 |                 |                 |                 |                 |                   |                 |
| United Kingdom.....                | 0                  | 429,507         | 0               | 452,768         | 0               | 445,426         | 0               | 487,721         | 0                 | 422,662         |
| United States.....                 | 0                  | 93,052          | 0               | 84,926          | 0               | 86,733          | 0               | 94,727          | 0                 | 90,682          |
| Australia <sup>2</sup> .....       | 0                  | 49,242          | 0               | 50,028          | 0               | 42,321          | 0               | 48,913          | 0                 |                 |
| Russia.....                        | 0                  | 43,287          | 0               | 53,411          | 0               | 45,653          | 0               | 35,161          | 0                 | 42,564          |
| Canada.....                        | 0                  | 38,268          | 0               | 50,886          | 0               | 53,115          | 0               | 40,418          | 0                 | 39,414          |
| Netherlands.....                   | 29                 | 26,144          | 93              | 29,587          | 119             | 31,214          | 128             | 36,166          | 136               | 25,485          |
| Irish Free State.....              | 0                  | 23,220          | 0               | 23,779          | 0               | 24,686          | 0               | 22,999          | 0                 | 23,802          |
| Iran <sup>3</sup> .....            | 742                | 14,925          | 131             | 14,475          | 10              | 9,843           | 0               | 9,639           | 0                 |                 |
| Morocco.....                       | 0                  | 12,770          | 0               | 12,688          | 0               | 13,835          | 0               | 18,213          | 0                 | 18,267          |
| New Zealand.....                   | 0                  | 11,159          | 0               | 10,178          | 0               | 12,115          | 0               | 10,415          | 0                 | 11,600          |
| Union of South<br>Africa.....      | 218                | 11,122          | 83              | 12,332          | 101             | 14,168          | 151             | 10,463          | 80                | 12,846          |
| Germany.....                       | 0                  | 11,037          | 0               | 13,320          | 0               | 11,672          | 0               | 10,577          | 0                 | 10,341          |
| Egypt.....                         | 259                | 10,814          | 97              | 12,199          | 20              | 15,433          | 5               | 16,584          | 0                 | 13,917          |
| British Malaya.....                | 1,323              | 10,491          | 925             | 9,694           | 667             | 7,516           | 526             | 4,972           | 529               | 3,770           |
| Chile.....                         | 4                  | 5,156           | 8               | 4,851           | 5               | 5,060           | 1               | 4,246           |                   | 2,716           |
| Indo-China.....                    | 2,164              | 4,827           | 1,206           | 3,428           | 1,294           | 3,161           | 1,362           | 1,711           | 1,466             | 1,560           |
| Poland.....                        | 15                 | 4,428           | 7               | 4,533           | 9               | 4,477           | 4               | 3,957           | 2                 | 4,143           |
| Argentina.....                     | 0                  | 3,867           | 0               | 3,874           | 0               | 3,950           | 0               | 3,934           | 0                 | 4,182           |
| France.....                        | 81                 | 3,456           | 38              | 3,278           | 40              | 3,534           | 20              | 3,286           | 26                | 4,123           |
| Algeria.....                       | 16                 | 2,140           | 16              | 2,646           | 41              | 2,958           |                 | 3,170           |                   | 4,259           |
| Czechoslovakia.....                | 3                  | 1,492           | 0               | 1,364           | 0               | 1,807           | 0               | 1,788           | 0                 | 681             |
| Denmark.....                       | 0                  | 1,276           | 0               | 1,218           | 0               | 1,359           | 0               | 1,345           | 0                 | 1,364           |
| Austria.....                       | 0                  | 1,236           | 2               | 1,150           | 2               | 1,344           | 0               | 1,042           | 0                 | 736             |
| Yugoslavia.....                    | 0                  | 869             | 2               | 647             | 0               | 620             | 0               | 456             | 0                 | 384             |
| Hungary.....                       | 5                  | 777             | 0               | 685             | 0               | 664             | 0               | 513             | 0                 | 449             |
| Total.....                         | 4,859              | 814,562         | 2,608           | 857,840         | 2,308           | 822,754         | 2,197           | 872,416         | 2,239             | 745,847         |

<sup>1</sup> Preliminary.<sup>2</sup> International Yearbook of Agricultural Statistics.<sup>3</sup> Java and Madura only.<sup>4</sup> Does not include Manchuria after June 1932.<sup>5</sup> Year ended Mar. 20 of following year; beginning 1931, figures are for year ended June 21 of following year.<sup>6</sup> Includes yerba mate and imitation tea.

Bureau of Agricultural Economics; official sources except where otherwise noted.

These figures are for tea leaves only; tea dust and sweepings and yerba mate are not included.

# FARM BUSINESS AND RELATED STATISTICS

TABLE 458.—Crop summary: Acreage, yield per acre, and production, 1932-34

| Crop                                    | Acreage harvested    |                      |                      | Unit                   | Yield per acre     |                    |                    | Production           |                     |                     |
|---|----------------------|----------------------|----------------------|------------------------|--------------------|--------------------|--------------------|----------------------|---------------------|---------------------|
|   | 1932                 | 1933                 | 1934                 |                        | 1932               | 1933               | 1934               | 1932                 | 1933                | 1934                |
|   | <i>1,000 acres</i>   | <i>1,000 acres</i>   | <i>1,000 acres</i>   |                        |                    |                    |                    | <i>Thousands</i>     | <i>Thousands</i>    | <i>Thousands</i>    |
| Corn, all.....                          | 103,668              | 103,260              | 87,486               | Bushel.....            | 25.8               | 22.8               | 15.8               | 2,906,873            | 2,351,658           | 1,380,718           |
| All wheat.....                          | 57,114               | 47,910               | 42,235               | do.....                | 13.1               | 11.0               | 11.8               | 745,788              | 528,975             | 496,469             |
| Winter.....                             | 35,216               | 28,485               | 32,945               | do.....                | 13.6               | 12.3               | 12.3               | 478,291              | 350,792             | 405,034             |
| All spring.....                         | 21,898               | 19,425               | 9,290                | do.....                | 12.2               | 9.2                | 9.8                | 267,497              | 178,183             | 91,435              |
| Durum.....                              | 3,946                | 2,310                | 990                  | do.....                | 10.3               | 7.2                | 7.2                | 40,600               | 16,737              | 7,086               |
| Other spring.....                       | 17,952               | 17,115               | 8,300                | do.....                | 12.6               | 9.4                | 10.2               | 226,897              | 161,446             | 84,349              |
| Oats.....                               | 41,420               | 36,701               | 30,395               | do.....                | 30.1               | 19.9               | 17.4               | 1,246,549            | 731,500             | 523,815             |
| Barley.....                             | 13,346               | 10,009               | 7,144                | do.....                | 22.6               | 15.6               | 16.6               | 302,042              | 155,825             | 118,929             |
| Rye.....                                | 3,344                | 2,349                | 1,937                | do.....                | 12.2               | 9.0                | 8.3                | 40,639               | 21,150              | 16,040              |
| Buckwheat.....                          | 3,454                | 462                  | 490                  | do.....                | 14.8               | 17.0               | 18.9               | 6,727                | 7,844               | 9,062               |
| Flaxseed.....                           | 1,975                | 1,328                | 974                  | do.....                | 5.9                | 5.2                | 5.4                | 11,671               | 6,947               | 5,253               |
| Rice.....                               | 873                  | 792                  | 781                  | do.....                | 47.3               | 46.8               | 49.0               | 41,250               | 37,058              | 38,296              |
| Grain sorghums <sup>1</sup> .....       | 7,864                | 8,149                | 7,599                | do.....                | 13.5               | 10.8               | 4.6                | 106,306              | 88,082              | 34,542              |
| Cotton, lint.....                       | 35,939               | 29,978               | 27,515               | Bale.....              | <sup>1</sup> 173.3 | <sup>2</sup> 208.5 | <sup>3</sup> 169.2 | 13,002               | 13,047              | 9,731               |
| Cottonseed.....                         |                      |                      |                      | Ton.....               |                    |                    |                    | 5,733                | 5,804               | 4,324               |
| Hay, all.....                           | 67,727               | 66,241               | 60,894               | do.....                | 1.22               | 1.13               | .94                | 82,488               | 74,607              | 56,690              |
| Hay, tame.....                          | 53,452               | 53,965               | 51,495               | do.....                | 1.32               | 1.23               | 1.01               | 70,351               | 68,130              | 51,941              |
| Hay, wild.....                          | 14,275               | 12,276               | 8,899                | do.....                | .85                | .69                | .58                | 12,137               | 8,477               | 4,749               |
| Sorgho <sup>2</sup> .....               | 2,633                | 3,354                | 3,557                | do.....                | 1.46               | 1.43               | .91                | 3,845                | 4,795               | 3,253               |
| Timothy seed.....                       | 372                  | 281                  | 126                  | Bushel.....            | 3.78               | 2.97               | 2.07               | 1,406                | 835                 | 262                 |
| Clover seed (red and alsike).....       | 1,102                | 1,096                | 964                  | do.....                | 1.53               | 1.36               | 1.14               | 1,690                | 1,489               | 1,099               |
| Sweetclover seed.....                   | 209                  | 213                  | 189                  | do.....                | 3.32               | 3.33               | 3.32               | 693                  | 710                 | 626                 |
| Lespedeza seed <sup>4</sup> .....       | 183                  | 320                  | 247                  | do.....                | 8.76               | 8.26               | 7.74               | 1,644                | 2,640               | 1,913               |
| Alfalfa seed.....                       | 301                  | 451                  | 392                  | do.....                | 1.98               | 2.27               | 2.09               | 595                  | 1,026               | 821                 |
| Beans, dry, edible.....                 | 1,408                | 1,692                | 1,878                | Bag <sup>5</sup> ..... | <sup>7</sup> 742   | <sup>8</sup> 729   | <sup>9</sup> 737   | 10,440               | 12,338              | 10,159              |
| Boybeans <sup>6</sup> .....             | 828                  | 847                  | 1,152                | Bushel.....            | 15.8               | 13.8               | 15.4               | 13,121               | 11,670              | 17,762              |
| Cowpeas <sup>6</sup> .....              | 691                  | 640                  | 654                  | do.....                | 8.9                | 9.1                | 8.1                | 6,120                | 5,806               | 5,296               |
| Peanuts <sup>6</sup> .....              | 1,607                | 1,345                | 1,571                | Pound.....             | 646                | 673                | 677                | 1,037,840            | 905,710             | 1,063,035           |
| Velvetbeans <sup>1</sup> .....          | 1,401                | 1,442                | 1,595                | Ton.....               | <sup>2</sup> 836   | <sup>3</sup> 845   | <sup>4</sup> 826   | 588                  | 609                 | 639                 |
| Potatoes.....                           | 3,379                | 3,194                | 3,303                | Bushel.....            | 105.9              | 100.3              | 116.6              | 357,871              | 320,203             | 335,287             |
| Sweetpotatoes.....                      | 926                  | 759                  | 762                  | do.....                | 84.7               | 85.8               | 88.5               | 78,431               | 65,134              | 67,400              |
| Tobacco.....                            | 1,411                | 1,757                | 1,335                | Pound.....             | 727                | 784                | 821                | 1,026,091            | 1,377,639           | 1,095,662           |
| Apples, total.....                      |                      |                      |                      | Bushel.....            |                    |                    |                    | <sup>7</sup> 140,775 | 142,981             | 119,855             |
| Apples, commercial.....                 |                      |                      |                      | do.....                |                    |                    |                    | 85,575               | 74,962              | 75,160              |
| Peaches, total.....                     |                      |                      |                      | do.....                |                    |                    |                    | <sup>7</sup> 42,443  | <sup>7</sup> 44,692 | <sup>7</sup> 45,404 |
| Pears, total.....                       |                      |                      |                      | do.....                |                    |                    |                    | <sup>7</sup> 22,050  | <sup>7</sup> 21,192 | <sup>7</sup> 23,474 |
| Grapes, total <sup>8</sup> .....        |                      |                      |                      | Ton.....               |                    |                    |                    | <sup>7</sup> 2,204   | <sup>7</sup> 1,910  | <sup>7</sup> 1,775  |
| Cherries (12 States).....               |                      |                      |                      | do.....                |                    |                    |                    | <sup>7</sup> 127     | <sup>7</sup> 117    | <sup>7</sup> 114    |
| Plums and prunes, fresh (5 States)..... |                      |                      |                      | do.....                |                    |                    |                    | <sup>7</sup> 159     | <sup>7</sup> 111    | <sup>7</sup> 134    |
| Prunes, dried (3 States).....           |                      |                      |                      | do.....                |                    |                    |                    | <sup>7</sup> 195     | <sup>7</sup> 199    | <sup>7</sup> 202    |
| Oranges (7 States).....                 |                      |                      |                      | Box.....               |                    |                    |                    | 51,368               | <sup>9</sup> 47,289 | 58,351              |
| Grapefruit (4 States).....              |                      |                      |                      | do.....                |                    |                    |                    | 15,243               | 14,243              | 18,248              |
| Lemons (California).....                |                      |                      |                      | do.....                |                    |                    |                    | 6,704                | 7,295               | 7,500               |
| Cranberries.....                        | 27                   | 27                   | 27                   | Barrel.....            | 21.4               | 25.7               | 16.2               | 585                  | 704                 | 443                 |
| Pecans.....                             |                      |                      |                      | Pound.....             |                    |                    |                    | 53,560               | 61,210              | 40,325              |
| Sorgho sirup.....                       | 250                  | 240                  | 223                  | Gallon.....            | 60.8               | 62.3               | 60.5               | 15,209               | 14,961              | 13,788              |
| Sugarcane (Louisiana).....              | 223                  | 214                  | 249                  | Ton.....               | 15.1               | 14.8               | 15.0               | 3,361                | 3,173               | 3,735               |
| Cane sirup.....                         | 110                  | 127                  | 139                  | Gallon.....            | 154.4              | 155.3              | 160.4              | 16,985               | 19,717              | 22,290              |
| Sugar beets.....                        | 764                  | 983                  | 766                  | Ton.....               | 11.9               | 11.2               | 9.8                | 9,070                | 11,030              | 7,481               |
| Maple sugar.....                        | <sup>10</sup> 12,091 | <sup>10</sup> 12,076 | <sup>10</sup> 12,158 | Pound.....             | <sup>11</sup> 1.73 | <sup>11</sup> 1.56 | <sup>11</sup> 1.68 | 1,623                | 1,288               | 1,271               |
| Maple sirup.....                        | <sup>10</sup> 12,091 | <sup>10</sup> 12,076 | <sup>10</sup> 12,158 | Gallon.....            | <sup>11</sup> 1.73 | <sup>11</sup> 1.56 | <sup>11</sup> 1.68 | 2,412                | 2,136               | 2,395               |

<sup>1</sup> All purposes.

<sup>2</sup> Pounds.

<sup>3</sup> For hay and forage, but not included in tame hay.

<sup>4</sup> Bushels of 25 pounds.

<sup>5</sup> Bags of 100 pounds.

<sup>6</sup> Covers only mature crop gathered for the beans, peas, or peanuts.

<sup>7</sup> Includes some quantities not harvested.

<sup>8</sup> Production is the total for fresh fruit, juice, and raisins.

<sup>9</sup> Includes 977,000 boxes of California oranges for charity.

<sup>10</sup> Trees tapped.

<sup>11</sup> Total equivalent sugar per tree.

TABLE 458.—*Crop summary: Acreage, yield per acre, and production, 1932-34*  
Continued

| Crop   | Acreage harvested |                |                | Unit        | Yield per acre |       |       | Production     |                |                |
|--|-------------------|----------------|----------------|-------------|----------------|-------|-------|----------------|----------------|----------------|
|  | 1932              | 1933           | 1934           |             | 1932           | 1933  | 1934  | 1932           | 1933           | 1934           |
|  | 1,000<br>acres    | 1,000<br>acres | 1,000<br>acres |             |                |       |       | Thou-<br>sands | Thou-<br>sands | Thou-<br>sands |
| Broomcorn.....                                     | 304               | 280            | 300            | Ton.....    | 2 244          | 2 214 | 2 199 | 37             | 30             | 30             |
| Hops.....  | 22                | 30             | 36             | Pound.....  | 1,094          | 1,319 | 1,127 | 24,058         | 39,965         | 40,345         |
| Commercial truck<br>crops:                         |                   |                |                |             |                |       |       |                |                |                |
| Asparagus <sup>12</sup> .....                      | 110.4             | 116.1          | 112.8          | .....       | .....          | ..... | ..... | .....          | .....          | .....          |
| Beans, lima <sup>12</sup> .....                    | 31.0              | 28.3           | 36.7           | .....       | .....          | ..... | ..... | .....          | .....          | .....          |
| Beans, snap <sup>12</sup> .....                    | 153.7             | 163.8          | 192.0          | .....       | .....          | ..... | ..... | .....          | .....          | .....          |
| Beets <sup>12</sup> .....                          | 13.7              | 14.4           | 17.9           | .....       | .....          | ..... | ..... | .....          | .....          | .....          |
| Cabbage <sup>12</sup> .....                        | 140.3             | 125.4          | 175.1          | Ton.....    | 7.04           | 5.80  | 6.93  | 7 987.1        | 7 727.7        | 7 1,213.3      |
| Cantaloups.....                                    | 135.8             | 109.0          | 96.2           | Crate.....  | 125            | 117   | 123   | 7 17,021       | 7 12,759       | 11,815         |
| Carrots.....                                       | 29.8              | 32.6           | 35.9           | Bushel..... | 362            | 326   | 362   | 7 10,815       | 10,635         | 13,005         |
| Cauliflower.....                                   | 31.8              | 30.2           | 28.6           | Crate.....  | 243            | 232   | 232   | 7 7,730        | 7 7,000        | 6,621          |
| Celery.....  | 35.6              | 31.2           | 32.2           | do.....     | 278            | 276   | 268   | 7 9,894        | 7 8,624        | 8,617          |
| Corn, sweet (can-<br>ning).....                    | 165.1             | 199.7          | 286.7          | Ton.....    | 2.34           | 1.97  | 1.73  | 387.2          | 394.3          | 495.6          |
| Cucumbers <sup>12</sup> .....                      | 78.2              | 98.5           | 121.8          | .....       | .....          | ..... | ..... | .....          | .....          | .....          |
| Eggplant.....                                      | 3.6               | 4.0            | 3.7            | Bushel..... | 222            | 228   | 201   | 809            | 910            | 746            |
| Lettuce.....                                       | 163.6             | 141.1          | 154.3          | Crate.....  | 109            | 123   | 123   | 7 17,820       | 7 17,374       | 7 19,055       |
| Onions.....  | 91.8              | 79.4           | 82.7           | Cwt.....    | 169            | 162   | 158   | 7 15,530       | 12,067         | 7 13,089       |
| Peas, green <sup>12</sup> .....                    | 209.2             | 327.5          | 350.8          | .....       | .....          | ..... | ..... | .....          | .....          | .....          |
| Peppers.....                                       | 17.3              | 17.6           | 15.2           | Bushel..... | 225            | 240   | 230   | 3,894          | 4,227          | 3,499          |
| Spinach <sup>12</sup> .....                        | 54.4              | 74.1           | 69.9           | .....       | .....          | ..... | ..... | .....          | .....          | .....          |
| Tomatoes <sup>12</sup> .....                       | 438.1             | 434.6          | 514.0          | .....       | .....          | ..... | ..... | .....          | .....          | .....          |
| Watermelons.....                                   | 233.2             | 186.4          | 196.6          | Number..... | 260            | 269   | 249   | 7 60,623       | 7 50,099       | 7 48,961       |
| Miscellaneous <sup>13</sup> .....                  | 39.5              | 38.9           | 43.9           | .....       | .....          | ..... | ..... | .....          | .....          | .....          |
| Total above<br>truck crops:                        |                   |                |                |             |                |       |       |                |                |                |
| For market<br>(21 crops).....                      | 1,478.6           | 1,348.6        | 1,427.1        | .....       | .....          | ..... | ..... | .....          | .....          | .....          |
| For manufac-<br>ture (11<br>crops).....            | 787.7             | 904.0          | 1,139.9        | .....       | .....          | ..... | ..... | .....          | .....          | .....          |
| Potatoes, early.....                               | 275.4             | 252.6          | 307.8          | Bushel..... | 121            | 122   | 139   | 33,320         | 30,791         | 42,796         |
| Strawberries.....                                  | 188.3             | 196.2          | 197.7          | Crate.....  | 70.5           | 67.6  | 67.1  | 7 13,280       | 7 13,258       | 7 13,264       |
| Total of crops<br>listed above <sup>14</sup> ..... | 359,528           | 329,128        | 288,596        | .....       | .....          | ..... | ..... | .....          | .....          | .....          |

<sup>2</sup> Pounds.<sup>7</sup> Includes some quantities not harvested.<sup>12</sup> Includes production used for canning or manufacture.<sup>13</sup> Includes following crops in certain States: Artichokes, sweet corn, and kale for market, and pimientos for manufacture.<sup>14</sup> Includes soybeans, cowpeas, and peanuts grazed or hogged off in the Southern States.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 459.—*Index numbers of the volume of net agricultural production, <sup>1</sup> 1919-34*

| Year                    | Grains | Fruits and vegetables | Truck crops | Cotton and cottonseed | All crops | Meat animals | Dairy products | Poultry products | All livestock and livestock products | Total |
|-------------------------|--------|-----------------------|-------------|-----------------------|-----------|--------------|----------------|------------------|--------------------------------------|-------|
| 1919.....               | 104    | 84                    | 58          | 76                    | 89        | 98           | 78             | 74               | 86                                   | 87    |
| 1920.....               | 117    | 100                   | 70          | 83                    | 101       | 91           | 77             | 74               | 83                                   | 91    |
| 1921.....               | 102    | 75                    | 61          | 53                    | 77        | 92           | 83             | 85               | 87                                   | 83    |
| 1922.....               | 100    | 108                   | 81          | 65                    | 89        | 102          | 87             | 88               | 94                                   | 92    |
| 1923.....               | 100    | 103                   | 79          | 67                    | 90        | 107          | 91             | 98               | 99                                   | 95    |
| 1924.....               | 102    | 96                    | 91          | 91                    | 96        | 102          | 94             | 91               | 97                                   | 97    |
| 1925.....               | 98     | 90                    | 96          | 107                   | 99        | 97           | 96             | 94               | 96                                   | 97    |
| 1926.....               | 96     | 109                   | 93          | 120                   | 106       | 98           | 99             | 99               | 98                                   | 102   |
| 1927.....               | 103    | 94                    | 105         | 87                    | 95        | 101          | 102            | 105              | 102                                  | 99    |
| 1928.....               | 108    | 117                   | 102         | 97                    | 106       | 101          | 103            | 106              | 103                                  | 104   |
| 1929.....               | 93     | 94                    | 113         | 99                    | 97        | 101          | 106            | 106              | 104                                  | 101   |
| 1930.....               | 85     | 108                   | 113         | 92                    | 95        | 101          | 107            | 109              | 105                                  | 101   |
| 1931.....               | 89     | 115                   | 109         | 112                   | 104       | 107          | 110            | 109              | 109                                  | 107   |
| 1932.....               | 85     | 101                   | 113         | 86                    | 90        | 106          | 110            | 105              | 107                                  | 100   |
| 1933.....               | 61     | 99                    | 105         | 86                    | 82        | 108          | 110            | 106              | 109                                  | 97    |
| 1934 <sup>2</sup> ..... | 42     | 106                   | 114         | 65                    | 69        | 115          | 106            | 102              | 110                                  | 92    |

<sup>1</sup> These index numbers are based on estimates of production of farm products for sale or for consumption in the farm home. Products fed to livestock, used for seed or in other forms of production are not included. Only the amounts of corn and oats sold for grain and only that part of the hay crop sold from farms are included. Production of meat animals is represented by total slaughter, including slaughter for farm use. The index number of dairy products production represents total milk produced for all purposes except whole milk fed to calves. Calendar-year production of livestock and livestock products is compared with crop production of the same year. Each group index, as well as the total, is obtained by multiplying the yearly quantities by a 1924-29 average farm price received by producers for each of the commodities, and the sum of these yearly values at average prices, divided by the corresponding average sum for the period 1924-29 taken as 100. The commodities included in constructing the index contributed about 93 percent of the gross income from agricultural production during the years 1924-29. The commodities included in each group are: Grains—wheat, corn, oats, barley, rye, buckwheat, flaxseed, rice, grain sorghum; fruits and vegetables—grapes, apples, apricots, peaches, pears, cranberries, figs, grapefruit, oranges, lemons, olives, potatoes, sweetpotatoes, dry edible beans; truck crops—asparagus, snap beans, beets, cabbage, cantaloups, carrots, cauliflower, celery, cucumbers, eggplant, lettuce, onions, peas, peppers, spinach, strawberries, tomatoes, watermelons; cotton and cottonseed; all crops include tobacco and hay in addition to all previous items; meat animals—cattle, calves, sheep, lambs, hogs; dairy products—milk total production less milk fed to calves; poultry products—chickens and eggs; all livestock and livestock products include wool in addition to the livestock and livestock products mentioned; the total index is the combined index of all crops and all livestock and livestock products.

<sup>2</sup> Preliminary.

Bureau of Agricultural Economics.

TABLE 460.—Total harvested acreage and farm value of principal crops, by States 1932-34<sup>1</sup>

| State and division  | Acreage harvested |              |              | Farm value <sup>2</sup> |                      |                      |
|---------------------|-------------------|--------------|--------------|-------------------------|----------------------|----------------------|
|                     | 1932              | 1933         | 1934         | 1932                    | 1933                 | 1934                 |
|                     | <i>Acres</i>      | <i>Acres</i> | <i>Acres</i> | <i>1,000 dollars</i>    | <i>1,000 dollars</i> | <i>1,000 dollars</i> |
| Maine.....          | 1,325,000         | 1,314,000    | 1,309,000    | 22,235                  | 38,932               | 27,925               |
| New Hampshire.....  | 371,000           | 370,000      | 371,000      | 5,743                   | 7,442                | 7,962                |
| Vermont.....        | 1,077,000         | 1,072,000    | 1,074,000    | 16,611                  | 19,018               | 24,442               |
| Massachusetts.....  | 406,300           | 404,900      | 409,000      | 15,993                  | 18,291               | 18,565               |
| Rhode Island.....   | 48,000            | 50,000       | 51,000       | 1,450                   | 1,793                | 1,787                |
| Connecticut.....    | 346,300           | 344,600      | 341,300      | 13,373                  | 14,493               | 15,251               |
| New York.....       | 6,450,400         | 6,480,400    | 6,546,300    | 91,330                  | 119,267              | 138,932              |
| New Jersey.....     | 647,000           | 653,000      | 668,000      | 25,883                  | 32,828               | 33,034               |
| Pennsylvania.....   | 6,128,100         | 6,094,700    | 5,989,200    | 81,681                  | 115,063              | 138,903              |
| North Atlantic..... | 16,799,100        | 16,763,600   | 16,758,800   | 274,299                 | 367,127              | 406,801              |
| Ohio.....           | 9,428,100         | 9,338,000    | 8,887,000    | 73,269                  | 112,356              | 164,605              |
| Indiana.....        | 10,339,700        | 9,769,500    | 9,403,800    | 64,705                  | 93,066               | 150,231              |
| Illinois.....       | 18,800,700        | 17,429,300   | 15,688,300   | 117,241                 | 158,858              | 217,624              |
| Michigan.....       | 7,299,000         | 7,223,000    | 7,165,000    | 75,130                  | 102,523              | 127,873              |
| Wisconsin.....      | 9,638,500         | 9,547,900    | 9,090,400    | 96,187                  | 122,014              | 176,913              |
| Minnesota.....      | 18,972,800        | 18,806,600   | 16,437,700   | 109,319                 | 145,515              | 186,593              |
| Iowa.....           | 22,397,200        | 22,315,400   | 18,021,400   | 123,200                 | 223,273              | 255,824              |
| Missouri.....       | 13,839,300        | 12,946,000   | 11,003,100   | 82,965                  | 122,141              | 104,573              |
| North Dakota.....   | 21,802,300        | 19,103,500   | 16,288,900   | 61,602                  | 81,560               | 49,498               |
| South Dakota.....   | 17,708,800        | 9,189,400    | 5,472,700    | 50,500                  | 30,575               | 28,233               |
| Nebraska.....       | 21,794,000        | 21,469,000   | 15,254,000   | 87,501                  | 133,063              | 85,233               |
| Kansas.....         | 24,222,900        | 20,293,900   | 17,498,400   | 82,468                  | 106,248              | 118,139              |
| North Central.....  | 196,143,300       | 177,436,500  | 143,208,700  | 1,024,087               | 1,431,192            | 1,665,339            |
| Delaware.....       | 378,000           | 381,000      | 379,000      | 5,473                   | 7,502                | 11,019               |
| Maryland.....       | 1,616,000         | 1,646,000    | 1,610,300    | 25,005                  | 33,901               | 43,876               |
| Virginia.....       | 3,592,000         | 3,748,000    | 3,648,000    | 46,553                  | 52,501               | 108,521              |
| West Virginia.....  | 1,411,700         | 1,431,700    | 1,418,000    | 17,892                  | 25,601               | 28,786               |
| North Carolina..... | 5,915,000         | 5,923,000    | 5,857,000    | 104,362                 | 194,390              | 266,449              |
| South Carolina..... | 4,351,000         | 3,958,000    | 4,011,000    | 51,398                  | 86,309               | 109,780              |
| Georgia.....        | 8,425,500         | 7,539,000    | 7,789,000    | 67,039                  | 128,588              | 161,445              |
| Florida.....        | 1,203,300         | 1,162,200    | 1,147,700    | 57,914                  | 66,659               | 82,941               |
| South Atlantic..... | 26,892,500        | 25,786,900   | 25,890,000   | 375,636                 | 625,451              | 807,597              |
| Kentucky.....       | 5,062,100         | 5,066,200    | 4,773,000    | 67,485                  | 90,950               | 120,356              |
| Tennessee.....      | 6,117,000         | 5,808,000    | 5,486,000    | 63,709                  | 100,132              | 123,627              |
| Alabama.....        | 7,867,000         | 6,324,000    | 6,686,000    | 62,051                  | 99,454               | 142,975              |
| Mississippi.....    | 6,444,000         | 5,804,000    | 5,999,000    | 66,630                  | 100,325              | 141,395              |
| Arkansas.....       | 6,601,000         | 5,857,000    | 5,580,000    | 68,328                  | 95,851               | 106,228              |
| Louisiana.....      | 3,974,400         | 3,437,300    | 3,594,300    | 54,711                  | 68,821               | 88,294               |
| Oklahoma.....       | 16,025,000        | 12,981,000   | 12,466,000   | 75,993                  | 121,326              | 108,228              |
| Texas.....          | 30,663,000        | 26,828,000   | 26,919,000   | 233,126                 | 352,339              | 534,456              |
| South Central.....  | 81,653,500        | 72,135,500   | 71,503,300   | 692,033                 | 1,029,198            | 1,160,462            |
| Montana.....        | 7,575,000         | 6,716,000    | 5,185,100    | 41,033                  | 42,762               | 55,883               |
| Idaho.....          | 2,924,000         | 2,776,000    | 2,584,000    | 33,894                  | 49,561               | 55,980               |
| Wyoming.....        | 2,036,000         | 2,030,000    | 1,355,000    | 13,754                  | 18,012               | 16,854               |
| Colorado.....       | 5,749,500         | 6,042,500    | 3,818,000    | 38,262                  | 56,567               | 48,927               |
| New Mexico.....     | 1,573,200         | 1,454,600    | 921,300      | 9,874                   | 17,239               | 17,971               |
| Arizona.....        | 468,000           | 501,000      | 490,000      | 12,608                  | 17,471               | 23,978               |
| Utah.....           | 1,186,000         | 1,175,000    | 934,000      | 17,018                  | 19,006               | 16,369               |
| Nevada.....         | 368,000           | 352,000      | 273,000      | 3,242                   | 2,966                | 2,816                |
| Washington.....     | 3,427,700         | 3,361,100    | 3,170,000    | 50,663                  | 75,362               | 84,890               |
| Oregon.....         | 2,731,000         | 2,694,000    | 2,609,000    | 34,602                  | 51,699               | 49,510               |
| California.....     | 5,156,000         | 4,856,000    | 4,914,000    | 239,670                 | 296,849              | 351,130              |
| Western.....        | 33,182,400        | 31,947,200   | 26,253,400   | 494,590                 | 647,744              | 724,308              |
| United States.....  | *354,670,800      | *324,069,700 | *283,584,200 | 2,860,645               | 4,100,712            | 4,764,507            |

<sup>1</sup> Includes corn (all), oats, barley, grain sorghum (all), wheat (all), rye, buckwheat, flaxseed, rice, beans (dry edible), soybeans alone, cowpeas alone, peanuts alone, velvetbeans alone, tame hay (all), wild hay, sorgo for forage and hay, timothy seed, red and alsike clover seed, sweetclover seed, lespedeza seed, alfalfa seed, cotton, tobacco, sorgo sirup, sugarcane (Louisiana), sugarcane sirup (except Louisiana), sugar beets, broomcorn, potatoes, sweetpotatoes, asparagus, snap beans, cabbage, cantaloups, cauliflower, celery, sweet corn (for canning), cucumbers, lettuce, onions, peas, spinach, tomatoes, watermelons; farm value also includes cottonseed, apples (all), peaches, pears, grapes, cranberries, oranges, hops, cherries, pecans, grapefruit, lemons, limes, apricots, plums, prunes (all), figs, olives, almonds, walnuts, maple products.

<sup>2</sup> Based on price received by producers Dec. 1, except for some early marketed crops for which price for marketing season is used, and differs from prices used in tables 481 and 462.

<sup>3</sup> Differs from total in table 458 in that cranberries, hops, artichokes, beets, carrots, eggplant, kale, lima beans, peppers, pimientos, sweet corn (for market), and strawberries are excluded, and for annual legumes only acreage grown alone is included.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.



TABLE 461.—Gross income from farm production, by States, 1931-33

| State                            | Crops            |                  |                   | Livestock and livestock products |                  |                   | Crops and livestock products combined |                  |                   |
|----------------------------------|------------------|------------------|-------------------|----------------------------------|------------------|-------------------|---------------------------------------|------------------|-------------------|
|                                  | 1931             | 1932             | 1933 <sup>1</sup> | 1931                             | 1932             | 1933 <sup>1</sup> | 1931                                  | 1932             | 1933 <sup>1</sup> |
|                                  | 1,000<br>dollars | 1,000<br>dollars | 1,000<br>dollars  | 1,000<br>dollars                 | 1,000<br>dollars | 1,000<br>dollars  | 1,000<br>dollars                      | 1,000<br>dollars | 1,000<br>dollars  |
| Maine.....                       | 22,759           | 18,572           | 35,712            | 25,684                           | 22,068           | 20,331            | 48,423                                | 40,640           | 56,043            |
| New Hampshire.....               | 5,917            | 4,654            | 5,611             | 15,524                           | 12,950           | 12,190            | 21,441                                | 17,604           | 17,801            |
| Vermont.....                     | 8,174            | 7,520            | 7,390             | 30,992                           | 25,423           | 24,927            | 39,166                                | 32,943           | 32,317            |
| Massachusetts.....               | 26,793           | 19,938           | 25,787            | 38,261                           | 31,300           | 28,825            | 65,054                                | 51,238           | 54,612            |
| Rhode Island.....                | 2,839            | 1,880            | 2,709             | 5,866                            | 4,879            | 4,660             | 8,705                                 | 6,739            | 7,399             |
| Connecticut.....                 | 17,886           | 13,222           | 15,737            | 29,463                           | 25,068           | 24,443            | 47,349                                | 38,290           | 40,180            |
| New York.....                    | 97,178           | 70,772           | 93,409            | 197,512                          | 151,346          | 153,631           | 294,690                               | 222,118          | 247,040           |
| New Jersey.....                  | 37,279           | 34,270           | 38,677            | 41,646                           | 34,367           | 34,001            | 78,925                                | 68,637           | 72,678            |
| Pennsylvania.....                | 75,856           | 55,789           | 72,005            | 174,966                          | 136,199          | 135,278           | 250,822                               | 191,988          | 207,283           |
| Ohio.....                        | 86,722           | 56,475           | 73,257            | 185,129                          | 135,162          | 143,742           | 271,851                               | 191,637          | 216,999           |
| Indiana.....                     | 57,967           | 43,224           | 45,781            | 156,712                          | 118,026          | 127,084           | 214,679                               | 161,250          | 172,865           |
| Illinois.....                    | 109,386          | 96,788           | 86,803            | 241,099                          | 174,297          | 188,052           | 350,485                               | 271,085          | 274,855           |
| Michigan.....                    | 62,674           | 54,272           | 71,192            | 116,096                          | 88,479           | 88,689            | 178,770                               | 142,751          | 159,881           |
| Wisconsin.....                   | 35,227           | 25,052           | 34,013            | 221,806                          | 159,042          | 165,910           | 237,083                               | 184,094          | 199,923           |
| Minnesota.....                   | 48,490           | 45,365           | 55,644            | 219,277                          | 150,166          | 153,092           | 267,767                               | 195,531          | 208,736           |
| Iowa.....                        | 51,152           | 59,984           | 58,066            | 383,285                          | 251,442          | 248,394           | 434,347                               | 311,426          | 306,460           |
| Missouri.....                    | 56,335           | 47,175           | 57,708            | 188,998                          | 139,186          | 145,786           | 245,333                               | 186,361          | 203,489           |
| North Dakota.....                | 20,003           | 40,183           | 43,373            | 53,166                           | 38,115           | 41,123            | 73,169                                | 78,298           | 84,496            |
| South Dakota.....                | 8,285            | 23,575           | 5,398             | 125,735                          | 52,631           | 67,980            | 133,990                               | 76,206           | 73,878            |
| Nebraska.....                    | 43,997           | 42,889           | 55,432            | 204,179                          | 124,016          | 126,084           | 248,176                               | 166,905          | 181,516           |
| Kansas.....                      | 95,010           | 51,257           | 53,108            | 163,488                          | 117,053          | 118,256           | 258,498                               | 168,310          | 171,364           |
| Delaware.....                    | 6,905            | 5,249            | 5,906             | 9,017                            | 6,734            | 5,799             | 15,922                                | 11,983           | 11,705            |
| Maryland.....                    | 28,068           | 21,502           | 25,459            | 36,535                           | 29,572           | 28,284            | 64,603                                | 51,074           | 53,743            |
| Virginia.....                    | 63,624           | 46,756           | 67,094            | 66,854                           | 54,463           | 49,753            | 130,478                               | 101,219          | 116,847           |
| West Virginia.....               | 21,746           | 15,083           | 18,275            | 37,810                           | 29,704           | 29,051            | 59,556                                | 44,787           | 47,326            |
| North Carolina.....              | 118,381          | 104,338          | 182,240           | 59,616                           | 45,796           | 44,574            | 177,997                               | 150,134          | 226,814           |
| South Carolina.....              | 61,213           | 50,955           | 73,546            | 28,341                           | 22,379           | 22,088            | 89,554                                | 73,334           | 95,634            |
| Georgia.....                     | 39,033           | 66,702           | 107,129           | 49,398                           | 38,883           | 36,240            | 138,431                               | 105,565          | 143,369           |
| Florida.....                     | 34,419           | 65,937           | 61,448            | 20,635                           | 16,592           | 16,410            | 105,054                               | 82,529           | 77,858            |
| Kentucky.....                    | 67,612           | 58,495           | 67,277            | 72,334                           | 55,087           | 55,214            | 139,946                               | 113,582          | 122,491           |
| Tennessee.....                   | 70,765           | 58,642           | 78,710            | 61,404                           | 46,936           | 46,984            | 132,169                               | 105,578          | 125,694           |
| Alabama.....                     | 80,686           | 67,215           | 87,466            | 44,848                           | 34,081           | 34,386            | 125,534                               | 101,286          | 121,852           |
| Mississippi.....                 | 89,953           | 72,355           | 91,716            | 38,843                           | 29,923           | 28,231            | 128,801                               | 102,278          | 119,947           |
| Arkansas.....                    | 87,680           | 71,246           | 84,474            | 35,903                           | 29,608           | 28,926            | 124,566                               | 100,864          | 113,400           |
| Louisiana.....                   | 70,580           | 57,256           | 64,797            | 30,434                           | 23,674           | 22,284            | 101,014                               | 80,930           | 87,081            |
| Oklahoma.....                    | 75,990           | 64,551           | 100,732           | 78,008                           | 57,809           | 62,207            | 153,996                               | 122,360          | 162,939           |
| Texas.....                       | 261,833          | 227,338          | 292,930           | 187,789                          | 132,816          | 148,029           | 449,622                               | 360,154          | 440,959           |
| Montana.....                     | 14,626           | 25,502           | 22,059            | 47,474                           | 29,598           | 33,738            | 62,100                                | 55,100           | 55,797            |
| Idaho.....                       | 25,364           | 23,123           | 35,290            | 35,452                           | 24,230           | 26,537            | 60,816                                | 47,353           | 61,827            |
| Wyoming.....                     | 7,644            | 5,741            | 8,222             | 25,641                           | 18,534           | 20,668            | 33,285                                | 24,275           | 28,890            |
| Colorado.....                    | 37,252           | 23,371           | 39,987            | 59,040                           | 41,759           | 35,054            | 96,292                                | 65,130           | 75,041            |
| New Mexico.....                  | 12,309           | 7,480            | 11,725            | 21,292                           | 17,362           | 18,161            | 33,601                                | 24,842           | 29,886            |
| Arizona.....                     | 13,872           | 11,083           | 15,114            | 17,540                           | 13,726           | 14,195            | 31,412                                | 24,809           | 29,309            |
| Utah.....                        | 10,811           | 10,447           | 12,561            | 27,277                           | 18,129           | 18,669            | 38,088                                | 28,576           | 31,230            |
| Nevada.....                      | 1,018            | 810              | 866               | 9,279                            | 5,597            | 5,965             | 10,295                                | 6,407            | 6,831             |
| Washington.....                  | 60,727           | 49,411           | 68,657            | 58,137                           | 44,237           | 44,587            | 118,864                               | 93,648           | 113,244           |
| Oregon.....                      | 33,610           | 29,577           | 38,963            | 47,953                           | 35,383           | 35,076            | 81,563                                | 64,960           | 75,039            |
| California.....                  | 277,733          | 233,321          | 271,958           | 153,715                          | 139,813          | 129,771           | 461,488                               | 373,134          | 401,729           |
| United States <sup>2</sup> ..... | 2,748,528        | 2,290,778        | 2,876,880         | 4,210,439                        | 3,033,620        | 3,094,359         | 6,958,967                             | 5,324,398        | 5,971,239         |

<sup>1</sup> Preliminary.<sup>2</sup> Totals include sugar beets for "Other States", 1931, \$5,157,000; 1932, \$4,456,000; 1933, \$5,472,000.<sup>3</sup> Includes \$30,643,000, value of hogs slaughtered under Agricultural Adjustment Administration reduction plan, Aug. 23 to Oct. 7, 1933, but does not include \$271,024,000 benefit payments on wheat, cotton, and tobacco, under the Agricultural Adjustment Administration.

Bureau of Agricultural Economics.

TABLE 462.—Gross income from farm production, United States, by commodities 1931-33

| Product                 | Gross income  |               |                   | Product                  | Gross income  |               |                   |
|-------------------------|---------------|---------------|-------------------|--------------------------|---------------|---------------|-------------------|
|                         | 1931          | 1932          | 1933 <sup>1</sup> |                          | 1931          | 1932          | 1933 <sup>1</sup> |
| CROPS                   | 1,000 dollars | 1,000 dollars | 1,000 dollars     | CROPS—continued          | 1,000 dollars | 1,000 dollars | 1,000 dollars     |
| Corn.....               | 138,062       | 170,456       | 138,580           | Pecans.....              | 6,157         | 2,998         | 4,749             |
| Wheat.....              | 261,607       | 202,105       | 280,044           | Sugar beets, for         |               |               |                   |
| Oats.....               | 42,661        | 34,809        | 32,907            | sugar.....               | 46,948        | 47,705        | 58,651            |
| Barley.....             | 12,332        | 16,895        | 15,089            | Sugarcane and sirup..... | 12,538        | 13,657        | 15,078            |
| Rye.....                | 3,883         | 4,126         | 4,342             | Sorgo sirup.....         | 5,161         | 3,898         | 4,862             |
| Buckwheat.....          | 2,848         | 2,016         | 2,881             | Maple sugar and          |               |               |                   |
| Flaxseed.....           | 12,200        | 9,444         | 9,384             | sirup.....               | 4,223         | 4,049         | 2,847             |
| Rice.....               | 21,230        | 16,155        | 26,390            | Forest products.....     | 120,386       | 105,427       | 114,916           |
| Grain sorghums.....     | 4,101         | 2,581         | 5,032             | Farm gardens.....        | 219,412       | 214,650       | 219,085           |
| Emmer and spelt.....    | 88            | 65            | 45                | Nursery products.....    | 44,891        | 30,854        | 36,283            |
| Pop corn.....           | 883           | 630           | 393               | Greenhouse prod-         |               |               |                   |
| Cotton lint.....        | 483,666       | 424,032       | 633,266           | ucts.....                | 67,219        | 43,002        | 51,978            |
| Cottonseed.....         | 44,807        | 40,316        | 50,920            | Total.....               | 2,748,528     | 2,290,778     | 2,876,880         |
| Tobacco.....            | 129,689       | 107,115       | 179,088           |                          |               |               |                   |
| Hay.....                | 74,978        | 53,116        | 60,297            | LIVESTOCK AND LIVE-      |               |               |                   |
| Sorgo forage.....       | 1,719         | 1,348         | 2,281             | STOCK PRODUCTS           |               |               |                   |
| Hemp.....               | 12            | 5             | 6                 | Cattle and calves.....   | 680,572       | 498,634       | 489,171           |
| Cloverseed (red and     |               |               |                   | Hogs.....                | 929,958       | 548,374       | * 618,604         |
| alsike).....            | 6,464         | 7,271         | 6,690             | Sheep and lambs.....     | 107,984       | 76,044        | 78,310            |
| Sweetclover seed.....   | 1,543         | 707           | 991               | Horses.....              | 8,322         | 7,785         | 7,907             |
| Lespedeza seed.....     | 2,939         | 2,114         | 3,700             | Mules.....               | 3,482         | 3,648         | 6,308             |
| Alfalfa seed.....       | 5,703         | 2,671         | 4,793             | Chickens.....            | 325,795       | 240,779       | 206,920           |
| Timothy seed.....       | 2,700         | 1,219         | 1,451             | Eggs (chicken).....      | 478,379       | 358,982       | 344,803           |
| Dry edible beans.....   | 24,253        | 18,159        | 29,658            | Milk.....                | 1,614,394     | 1,260,424     | 1,262,554         |
| Soybeans.....           | 5,077         | 4,904         | 4,347             | Wool.....                | 50,414        | 30,014        | 75,033            |
| Cowpeas.....            | 3,648         | 3,124         | 3,306             | Mohair.....              | 3,176         | 1,485         | 4,751             |
| Peanuts.....            | 18,055        | 13,471        | 20,758            | Honey.....               | 7,963         | 7,451         | -----             |
| Broomcorn.....          | 2,041         | 1,381         | 3,397             | Total.....               | 4,210,439     | 3,033,620     | * 3,094,359       |
| Potatoes.....           | 145,583       | 114,240       | 222,932           | Grand total.....         | 6,958,967     | 5,324,398     | * 5,971,239       |
| Sweetpotatoes.....      | 40,069        | 35,087        | 38,520            |                          |               |               |                   |
| Truck crops.....        | 292,791       | 222,547       | 225,441           | United States: After     |               |               |                   |
| Hops.....               | 3,642         | 4,199         | 11,059            | deducting for in-        |               |               |                   |
| Apples.....             | 125,876       | 86,638        | 103,851           | terstate sales of        |               |               |                   |
| Peaches.....            | 40,788        | 18,897        | 32,432            | crops, principally       |               |               |                   |
| Pears.....              | 13,676        | 7,627         | 10,252            | seeds, and adding        |               |               |                   |
| Cherries.....           | 7,964         | 5,157         | 6,575             | for "other poul-         |               |               |                   |
| Plums and apricots..... | 4,499         | 2,790         | 4,369             | try" and honey           |               |               |                   |
| Grapes.....             | 36,085        | 26,982        | 33,841            | not estimated by         |               |               |                   |
| Other fruits and        |               |               |                   | States.....              | 6,968,491     | 5,330,943     | * 5,985,341       |
| nuts.....               | 134,988       | 112,356       | 118,380           |                          |               |               |                   |
| Strawberries.....       | 47,280        | 32,383        | 27,748            |                          |               |               |                   |
| Small fruits.....       | 16,171        | 11,371        | 9,243             |                          |               |               |                   |
| Cranberries.....        | 3,992         | 4,029         | 3,752             |                          |               |               |                   |

<sup>1</sup> Preliminary.<sup>2</sup> Does not include \$271,024,000 benefit payments on wheat, cotton, and tobacco, under the Agricultural Adjustment Administration.<sup>3</sup> Includes \$30,643,000, value of hogs slaughtered under Agricultural Adjustment Administration reduction plan, Aug. 23 to Oct. 7, 1933.

Bureau of Agricultural Economics. Estimated quantities produced, sold, and consumed in farm households equals times weighted annual prices. Cash income plus value of commodities consumed in farm households equals gross incomes. For feed and seed crops, horses, and mules, value includes sales by farmers in some States eventually bought by farmers in other States. These interfarm sales tend to overestimate the total income from farm production for the country as a whole.

TABLE 463.—*Gross income from farm production by groups of commodities, expenditures, income available for operators' capital, labor, and management and current value of capital employed in agriculture, United States, 1924-33*

| Item  | 1924                             | 1925                             | 1926                             | 1927                             | 1928                             | 1929 <sup>1</sup>                | 1930 <sup>1</sup>                | 1931 <sup>1</sup>                | 1932 <sup>1</sup>                | 1933 <sup>1</sup>                |
|---|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
|   | <i>Mil-<br/>lion<br/>dollars</i> | <i>Mil-<br/>lion<br/>dollars</i> | <i>Mil-<br/>lion<br/>dollars</i> | <i>Mil-<br/>lion<br/>dollars</i> | <i>Mil-<br/>lion<br/>dollars</i> | <i>Mil-<br/>lion<br/>dollars</i> | <i>Mil-<br/>lion<br/>dollars</i> | <i>Mil-<br/>lion<br/>dollars</i> | <i>Mil-<br/>lion<br/>dollars</i> | <i>Mil-<br/>lion<br/>dollars</i> |
| Crops:  |                                  |                                  |                                  |                                  |                                  |                                  |                                  |                                  |                                  |                                  |
| Grains.....   | 1,755                            | 1,496                            | 1,432                            | 1,592                            | 1,513                            | 1,297                            | 806                              | 488                              | 450                              | 506                              |
| Fruits and nuts.....  | 671                              | 683                              | 694                              | 690                              | 705                              | 707                              | 567                              | 457                              | 325                              | 376                              |
| Vegetables.....   | 953                              | 1,193                            | 1,093                            | 1,062                            | 967                              | 1,130                            | 934                              | 726                              | 609                              | 747                              |
| Sugar crops.....  | 104                              | 95                               | 103                              | 104                              | 92                               | 83                               | 94                               | 69                               | 69                               | 81                               |
| Cotton and cottonseed.....  | 1,710                            | 1,740                            | 1,251                            | 1,464                            | 1,470                            | 1,389                            | 751                              | 528                              | 464                              | 684                              |
| Tobacco.....  | 259                              | 251                              | 237                              | 257                              | 278                              | 286                              | 212                              | 130                              | 107                              | 179                              |
| Other crops.....  | 718                              | 690                              | 658                              | 648                              | 650                              | 542                              | 454                              | 348                              | 264                              | 301                              |
| Total crops.....  | 6,170                            | 6,148                            | 5,468                            | 5,817                            | 5,675                            | 5,434                            | 3,818                            | 2,746                            | 2,288                            | 2,874                            |
| Livestock and livestock prod-<br>ucts:  |                                  |                                  |                                  |                                  |                                  |                                  |                                  |                                  |                                  |                                  |
| Cattle, hogs, and sheep....   | 2,380                            | 2,822                            | 2,922                            | 2,664                            | 2,727                            | 2,805                            | 2,448                            | 1,719                            | 1,123                            | 1,186                            |
| Poultry and eggs.....   | 989                              | 1,114                            | 1,167                            | 1,108                            | 1,202                            | 1,241                            | 1,059                            | 816                              | 609                              | 560                              |
| Dairy products.....   | 1,678                            | 1,759                            | 1,805                            | 1,911                            | 1,994                            | 2,323                            | 2,081                            | 1,614                            | 1,260                            | 1,263                            |
| Wool.....   | 87                               | 97                               | 88                               | 86                               | 111                              | 99                               | 68                               | 50                               | 30                               | 75                               |
| Other.....  | 33                               | 28                               | 30                               | 30                               | 32                               | 39                               | 30                               | 23                               | 21                               | 27                               |
| Total livestock.....  | 5,167                            | 5,820                            | 6,012                            | 5,799                            | 6,066                            | 6,507                            | 5,636                            | 4,222                            | 3,043                            | 3,111                            |
| Total crops and live-<br>stock.....   | 11,337                           | 11,968                           | 11,480                           | 11,616                           | 11,741                           | 11,941                           | 9,454                            | 6,968                            | 5,331                            | 5,985                            |
| Rental and benefit pay-<br>ments.....   |                                  |                                  |                                  |                                  |                                  |                                  |                                  |                                  |                                  | 271                              |
| Grand total.....  |                                  |                                  |                                  |                                  |                                  |                                  |                                  |                                  |                                  | 6,256                            |
| Expenditures:   |                                  |                                  |                                  |                                  |                                  |                                  |                                  |                                  |                                  |                                  |
| Current expenditures for<br>production <sup>2</sup> .....                             | 1,596                            | 1,724                            | 1,816                            | 1,775                            | 1,904                            | 1,972                            | 1,737                            | 1,356                            | 1,142                            | 1,088                            |
| Depreciation of buildings<br>and equipment <sup>3</sup> .....                         | 850                              | 896                              | 889                              | 894                              | 894                              | 912                              | 892                              | 843                              | 805                              | 762                              |
| Wages, interest, rent, and<br>taxes <sup>4</sup> .....                                | 3,092                            | 3,214                            | 3,255                            | 3,310                            | 3,355                            | 3,402                            | 2,977                            | 2,393                            | 1,920                            | 1,779                            |
| Total deductions.....   | 5,538                            | 5,834                            | 5,960                            | 5,979                            | 6,153                            | 6,286                            | 5,606                            | 4,592                            | 3,867                            | 3,629                            |
| Income available for operators'<br>labor, capital, and manage-<br>ment.....           | 5,799                            | 6,134                            | 5,520                            | 5,637                            | 5,588                            | 5,655                            | 3,848                            | 2,376                            | 1,464                            | 2,627                            |
| Amount available for capital<br>and management.....                                   | 1,394                            | 1,687                            | 986                              | 1,136                            | 1,097                            | 1,136                            | -248                             | -842                             | -996                             | 366                              |
| Return to capital and man-<br>agement as percentage of<br>operators' net capital..... | <i>Per-<br/>cent</i><br>4.1      | <i>Per-<br/>cent</i><br>5.0      | <i>Per-<br/>cent</i><br>2.9      | <i>Per-<br/>cent</i><br>3.5      | <i>Per-<br/>cent</i><br>3.3      | <i>Per-<br/>cent</i><br>3.3      | <i>Per-<br/>cent</i><br>-0.7     | <i>Per-<br/>cent</i><br>-2.8     | <i>Per-<br/>cent</i><br>-4.2     | <i>Per-<br/>cent</i><br>1.9      |

<sup>1</sup> Estimates since 1929 have been adjusted to the revised estimates of production which were made after the 1930 census data became available. Estimates of income from 1924-28 have not yet been adjusted to revised production estimates. The 1929 estimate of income from crops, comparable with the estimates of 1924-28, was \$5,609,000,000 and 1929 estimate of livestock was \$6,302,000,000; total gross income on old base for 1929 was \$11,950,000,000 compared with \$11,941,000,000 when revised.

<sup>2</sup> All of the current operating costs except 7.5 percent of fertilizer costs, 9.5 percent of feed, 10 percent of binder twine, and 15 percent of ginning costs which are estimated as paid by nonfarmer landlords.

<sup>3</sup> Depreciation of farm buildings and farm equipment is based upon the value of buildings and farm equipment according to the 1919 and 1929 census, the amount spent for replacements on buildings and machinery and price changes for farm machinery and building materials. While the rate of depreciation fluctuates slightly from year to year, during the last 14 years it has averaged about 5 percent of the value of farm buildings and 21 percent of the value of machinery, automobiles, and trucks.

<sup>4</sup> Cash wages to hired labor plus an allowance of 25 percent for board and an additional 12½ percent of the cash wage to represent perquisites furnished hired labor and domestic hired labor contributing to production. Includes only that portion of interest payable by farm operators; figured at 75 percent of all interest payable on farm mortgage debt on real estate used in production and interest on all bank loans, other than real estate loans. It is assumed that 70 percent of all taxes on farm property used in production are paid by farm operators and that 72 percent of all rent paid is paid to nonfarmer landlords.

TABLE 464.—*Current value of agricultural capital, gross income from farm production, and selected expenditures, United States, 1909-33*

| Year                     | Current value of agricultural capital <sup>1</sup> | Gross income from farm production <sup>2</sup> | Selected expenditures                |                   |                         |   |  |                      |                    |                                     |
|--------------------------|--|--|--------------------------------------|-------------------|-------------------------|---|--|----------------------|--------------------|-------------------------------------|
|                          |  |  | Wages (including board) <sup>3</sup> | Feed <sup>4</sup> | Fertilizer <sup>5</sup> | Farm implements (including autos and trucks) <sup>6</sup> | Cost of operating autos, trucks, and tractors <sup>7</sup> | Ginning <sup>8</sup> | Taxes <sup>9</sup> | Interest on mortgages <sup>10</sup> |
|                          | Million dollars                                    | Million dollars                                | Million dollars                      | Million dollars   | Million dollars         | Million dollars   | Million dollars  | Million dollars      | Million dollars    | Million dollars                     |
| 1909.....                | 41,354   | 6,238  | 652                                  | 300               | 115                     | 222   | 2  | 33                   | 200                | 199                                 |
| 1910.....                | 42,985   | 6,643  | 674                                  | 302               | 137                     | 239   | 4  | 39                   | 204                | 210                                 |
| 1911.....                | 44,086   | 6,372  | 673                                  | 372               | 152                     | 237   | 8  | 52                   | 210                | 221                                 |
| 1912.....                | 46,081   | 6,784  | 697                                  | 336               | 153                     | 256   | 15   | 45                   | 212                | 232                                 |
| 1913.....                | 47,778   | 6,975  | 721                                  | 453               | 172                     | 270   | 24   | 46                   | 218                | 240                                 |
| 1914.....                | 47,965   | 7,028  | 696                                  | 431               | 188                     | 284   | 44   | 56                   | 222                | 252                                 |
| 1915.....                | 50,533   | 7,395  | 701                                  | 471               | 158                     | 315   | 67   | 43                   | 243                | 269                                 |
| 1916.....                | 55,041   | 8,914  | 766                                  | 638               | 163                     | 394   | 116  | 50                   | 260                | 299                                 |
| 1917.....                | 61,576   | 12,832   | 941                                  | 571               | 217                     | 509   | 181  | 54                   | 292                | 345                                 |
| 1918.....                | 67,055   | 15,101   | 1,162                                | 1,023             | 297                     | 569   | 246  | 64                   | 311                | 401                                 |
| 1919.....                | 66,630   | 16,935   | 1,363                                | 1,097             | 328                     | 651   | 330  | 77                   | 393                | 479                                 |
| 1920.....                | 78,436   | 13,566   | 1,636                                | 1,028             | 350                     | 742   | 410  | 91                   | 483                | 545                                 |
| 1921.....                | 71,146   | 8,927  | 1,017                                | 958               | 199                     | 359   | 324  | 47                   | 510                | 554                                 |
| 1922.....                | 62,022   | 9,944  | 981                                  | 888               | 192                     | 433   | 296  | 59                   | 509                | 568                                 |
| 1923.....                | 60,356   | 11,041   | 1,102                                | 819               | 213                     | 618   | 299  | 61                   | 516                | 564                                 |
| 1924.....                | 58,244   | 11,337   | 1,074                                | 750               | 215                     | 568   | 321  | 82                   | 511                | 567                                 |
| 1925.....                | 57,189   | 11,968   | 1,118                                | 784               | 248                     | 725   | 375  | 100                  | 517                | 568                                 |
| 1926.....                | 57,255   | 11,480   | 1,161                                | 818               | 242                     | 671   | 417  | 117                  | 626                | 568                                 |
| 1927.....                | 56,145   | 11,616   | 1,175                                | 851               | 217                     | 654   | 422  | 73                   | 545                | 568                                 |
| 1928.....                | 56,561   | 11,741   | 1,183                                | 885               | 275                     | 801   | 451  | 88                   | 556                | 563                                 |
| 1929.....                | 57,604   | 11,941   | 1,194                                | 919               | 276                     | 916   | 486  | 89                   | 567                | 554                                 |
| 1930.....                | 57,670   | 9,454  | 1,011                                | 685               | 270                     | 677   | 483  | 77                   | 566                | 545                                 |
| 1931.....                | 51,812   | 6,968  | 734                                  | 462               | 190                     | 366   | 407  | 75                   | 519                | 528                                 |
| 1932.....                | 43,351   | 5,331  | 475                                  | 409               | 113                     | 186   | 384  | 56                   | 450                | 511                                 |
| 1933 <sup>11</sup> ..... | 35,812   | 6,256  | 426                                  | 353               | 118                     | 215   | 380  | 62                   | 385                | 442                                 |

<sup>1</sup> As of Jan. 1. Includes land, buildings, machinery, and livestock. Estimates are census values for census years. The value of land and buildings for intercensal years is based on the index of land values per acre and a straight-line interpolation of total acreage in farms. Livestock values are annual estimates of the U. S. Department of Agriculture. Value of farm machinery is based on estimated purchases of farm machinery and changes in the prices paid by farmers for farm machinery.

<sup>2</sup> For years 1924-33, see table 463. The estimates for 1909-23 are based on items which represent about 95 percent of the gross income in 1924-33.

<sup>3</sup> Estimates from 1909-24 based on interpolations between census estimates and the index of farm wage rates; 1924-33 upon farm-wage rate, changes in the number of hired laborers per farm, and the number of farms.

<sup>4</sup> From 1909 to 1919 interpolation between census years based on an index of prices paid by farmers for feed and an index of production of feed crops. From 1919 to 1933 estimates are based on prices of feed crops, production of byproducts feeds and sales of feed grains and hay which are not used in industry or exported.

<sup>5</sup> Interpolated between census estimates based on estimated total fertilizer consumption and the U. S. Department of Agriculture index of fertilizer prices paid by farmers.

<sup>6</sup> Value of farm implements interpolated between the 1909, 1914, and 1919 census value of implements produced, after adjustment to represent retail values. Interpolations for other years are based on factory values of farm implements sold in the United States and raised to retail values. Farmers' expenditures for automobiles and trucks are estimated from registrations in principal agricultural States and prices paid by farmers.

<sup>7</sup> Includes the estimated cost of operating trucks, tractors, and one-half of the cost of operating automobiles. Expenditures per vehicle are based upon changes in the prices of gasoline, kerosene, oil and tires, licenses, and estimated annual mileage. Cost of operation is estimated cost per vehicle times estimated number of vehicles on farms.

<sup>8</sup> Annual cotton production multiplied by ginning costs per bale.

<sup>9</sup> Revised estimates of taxes are based on a study of real-estate taxes by States. In adjusting for total taxes it is assumed that the real estate tax is 85 percent and personal property tax is 15 percent of the total.

<sup>10</sup> Interpolations between total farm mortgages for 1910, 1920, 1925, 1928, 1930, using smoothed estimates for 1911-19 derived from value of current agricultural capital, and smooth curve, 1920-30.

<sup>11</sup> Preliminary.

Bureau of Agricultural Economics; tentative estimates of the Bureau

TABLE 463.—*Gross income from farm production by groups of commodities, expenditures, income available for operators' capital, labor, and management and current value of capital employed in agriculture, United States, 1924-33*

| Item  | 1924           | 1925           | 1926           | 1927           | 1928           | 1929 <sup>1</sup> | 1930 <sup>1</sup> | 1931 <sup>1</sup> | 1932 <sup>1</sup> | 1933 <sup>1</sup> |
|---|----------------|----------------|----------------|----------------|----------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|   | <i>Mil-</i>    | <i>Mil-</i>    | <i>Mil-</i>    | <i>Mil-</i>    | <i>Mil-</i>    | <i>Mil-</i>       | <i>Mil-</i>       | <i>Mil-</i>       | <i>Mil-</i>       | <i>Mil-</i>       |
|   | <i>lion</i>    | <i>lion</i>    | <i>lion</i>    | <i>lion</i>    | <i>lion</i>    | <i>lion</i>       | <i>lion</i>       | <i>lion</i>       | <i>lion</i>       | <i>lion</i>       |
|   | <i>dollars</i> | <i>dollars</i> | <i>dollars</i> | <i>dollars</i> | <i>dollars</i> | <i>dollars</i>    | <i>dollars</i>    | <i>dollars</i>    | <i>dollars</i>    | <i>dollars</i>    |
| Crops:  |                |                |                |                |                |                   |                   |                   |                   |                   |
| Grains.....   | 1,755          | 1,496          | 1,432          | 1,592          | 1,513          | 1,297             | 806               | 488               | 450               | 506               |
| Fruits and nuts.....  | 671            | 1,683          | 694            | 690            | 705            | 707               | 567               | 457               | 325               | 376               |
| Vegetables.....   | 953            | 1,193          | 1,093          | 1,062          | 967            | 1,130             | 934               | 726               | 609               | 747               |
| Sugar crops.....  | 104            | 95             | 103            | 104            | 92             | 83                | 94                | 69                | 69                | 81                |
| Cotton and cottonseed.....  | 1,710          | 1,740          | 1,251          | 1,464          | 1,470          | 1,389             | 751               | 528               | 464               | 684               |
| Tobacco.....  | 259            | 251            | 237            | 257            | 278            | 286               | 212               | 130               | 107               | 179               |
| Other crops.....  | 718            | 690            | 658            | 648            | 650            | 542               | 454               | 348               | 264               | 301               |
| Total crops.....  | 6,170          | 6,148          | 5,468          | 5,817          | 5,675          | 5,434             | 3,818             | 2,746             | 2,288             | 2,874             |
| Livestock and livestock products:   |                |                |                |                |                |                   |                   |                   |                   |                   |
| Cattle, hogs, and sheep.....  | 2,380          | 2,822          | 2,922          | 2,664          | 2,727          | 2,805             | 2,448             | 1,719             | 1,123             | 1,186             |
| Poultry and eggs.....   | 989            | 1,114          | 1,167          | 1,108          | 1,202          | 1,241             | 1,059             | 816               | 609               | 580               |
| Dairy products.....   | 1,678          | 1,789          | 1,805          | 1,911          | 1,994          | 2,323             | 2,081             | 1,614             | 1,260             | 1,263             |
| Wool.....   | 87             | 97             | 88             | 86             | 111            | 99                | 68                | 50                | 30                | 75                |
| Other.....  | 33             | 28             | 30             | 30             | 32             | 39                | 30                | 23                | 21                | 27                |
| Total livestock.....  | 5,167          | 5,820          | 6,012          | 5,799          | 6,066          | 6,507             | 5,636             | 4,222             | 3,043             | 3,111             |
| Total crops and livestock.....  | 11,337         | 11,968         | 11,480         | 11,616         | 11,741         | 11,941            | 9,454             | 6,968             | 5,331             | 5,985             |
| Rental and benefit payments.....  |                |                |                |                |                |                   |                   |                   |                   | 271               |
| Grand total.....  |                |                |                |                |                |                   |                   |                   |                   | 6,256             |
| Expenditures:   |                |                |                |                |                |                   |                   |                   |                   |                   |
| Current expenditures for production <sup>2</sup> .....                        | 1,596          | 1,724          | 1,816          | 1,775          | 1,904          | 1,972             | 1,737             | 1,356             | 1,142             | 1,088             |
| Depreciation of buildings and equipment <sup>3</sup> .....                    | 850            | 896            | 889            | 894            | 894            | 912               | 892               | 843               | 805               | 762               |
| Wages, interest, rent, and taxes <sup>4</sup> .....                           | 3,092          | 3,214          | 3,255          | 3,310          | 3,355          | 3,402             | 2,977             | 2,393             | 1,920             | 1,779             |
| Total deductions.....   | 5,538          | 5,834          | 5,960          | 5,979          | 6,153          | 6,286             | 5,606             | 4,592             | 3,867             | 3,629             |
| Income available for operators' labor, capital, and management.....           | 5,799          | 6,134          | 5,520          | 5,637          | 5,588          | 5,655             | 3,848             | 2,376             | 1,484             | 2,627             |
| Amount available for capital and management.....                              | 1,394          | 1,687          | 986            | 1,136          | 1,097          | 1,136             | -248              | -842              | -996              | 366               |
| Return to capital and management as percentage of operators' net capital..... | <i>Per-</i>    | <i>Per-</i>    | <i>Per-</i>    | <i>Per-</i>    | <i>Per-</i>    | <i>Per-</i>       | <i>Per-</i>       | <i>Per-</i>       | <i>Per-</i>       | <i>Per-</i>       |
|   | <i>cent</i>    | <i>cent</i>    | <i>cent</i>    | <i>cent</i>    | <i>cent</i>    | <i>cent</i>       | <i>cent</i>       | <i>cent</i>       | <i>cent</i>       | <i>cent</i>       |
|   | 4.1            | 5.0            | 2.9            | 3.5            | 3.3            | 3.3               | -0.7              | -2.8              | -4.2              | 1.9               |

<sup>1</sup> Estimates since 1929 have been adjusted to the revised estimates of production which were made after the 1930 census data became available. Estimates of income from 1924-28 have not yet been adjusted to revised production estimates. The 1929 estimate of income from crops, comparable with the estimates of 1924-28, was \$5,609,000,000 and 1929 estimate of livestock was \$6,302,000,000; total gross income on old base for 1929 was \$11,950,000,000 compared with \$11,941,000,000 when revised.

<sup>2</sup> All of the current operating costs except 7.5 percent of fertilizer costs, 9.5 percent of feed, 10 percent of binder twine, and 15 percent of ginning costs which are estimated as paid by nonfarmer landlords.

<sup>3</sup> Depreciation of farm buildings and farm equipment is based upon the value of buildings and farm equipment according to the 1919 and 1929 census, the amount spent for replacements on buildings and machinery and price changes for farm machinery and building materials. While the rate of depreciation fluctuates slightly from year to year, during the last 14 years it has averaged about 5 percent of the value of farm buildings and 21 percent of the value of machinery, automobiles, and trucks.

<sup>4</sup> Cash wages to hired labor plus an allowance of 25 percent for board and an additional 12½ percent of the cash wage to represent perquisites furnished hired labor and domestic hired labor contributing to production. Includes only that portion of interest payable by farm operators; figured at 75 percent of all interest payable on farm mortgage debt on real estate used in production and interest on all bank loans, other than real estate loans. It is assumed that 70 percent of all taxes on farm property used in production are paid by farm operators and that 72 percent of all rent paid is paid to nonfarmer landlords.

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TABLE 464.—*Current value of agricultural capital, gross income from farm production, and selected expenditures, United States, 1909-33*

| Year                     | Current value of agricultural capital | Gross income from farm production <sup>2</sup> | Selected expenditures                |                   |                         |   |  |                      |                    |                                     |
|--------------------------|---------------------------------------|--|--------------------------------------|-------------------|-------------------------|---|--|----------------------|--------------------|-------------------------------------|
|                          |                                       |  | Wages (including board) <sup>3</sup> | Feed <sup>4</sup> | Fertilizer <sup>5</sup> | Farm implements (including autos and trucks) <sup>6</sup> | Cost of operating autos, trucks, and tractors <sup>7</sup> | Ginning <sup>8</sup> | Taxes <sup>9</sup> | Interest on mortgages <sup>10</sup> |
|                          | Million dollars                       | Million dollars                                | Million dollars                      | Million dollars   | Million dollars         | Million dollars   | Million dollars  | Million dollars      | Million dollars    | Million dollars                     |
| 1909.....                | 41,354                                | 6,238  | 652                                  | 300               | 115                     | 222   | 2  | 33                   | 200                | 199                                 |
| 1910.....                | 42,985                                | 6,643  | 674                                  | 302               | 137                     | 239   | 4  | 39                   | 204                | 210                                 |
| 1911.....                | 44,086                                | 6,372  | 673                                  | 372               | 152                     | 237   | 8  | 52                   | 210                | 221                                 |
| 1912.....                | 46,081                                | 6,784  | 697                                  | 336               | 153                     | 256   | 15   | 45                   | 212                | 232                                 |
| 1913.....                | 47,778                                | 6,975  | 721                                  | 453               | 172                     | 270   | 24   | 46                   | 218                | 240                                 |
| 1914.....                | 47,965                                | 7,028  | 696                                  | 431               | 188                     | 284   | 44   | 56                   | 222                | 252                                 |
| 1915.....                | 50,533                                | 7,395  | 701                                  | 471               | 158                     | 315   | 67   | 43                   | 243                | 269                                 |
| 1916.....                | 55,041                                | 8,914  | 766                                  | 638               | 163                     | 394   | 116  | 50                   | 260                | 299                                 |
| 1917.....                | 61,576                                | 12,832   | 941                                  | 871               | 217                     | 509   | 181  | 54                   | 292                | 345                                 |
| 1918.....                | 67,055                                | 15,101   | 1,162                                | 1,023             | 297                     | 569   | 246  | 64                   | 311                | 401                                 |
| 1919.....                | 66,630                                | 16,935   | 1,363                                | 1,097             | 328                     | 651   | 330  | 77                   | 393                | 479                                 |
| 1920.....                | 78,436                                | 13,566   | 1,636                                | 1,028             | 350                     | 742   | 410  | 91                   | 483                | 545                                 |
| 1921.....                | 71,146                                | 8,927  | 1,017                                | 958               | 199                     | 359   | 324  | 47                   | 510                | 554                                 |
| 1922.....                | 62,022                                | 9,944  | 981                                  | 838               | 192                     | 433   | 296  | 59                   | 509                | 568                                 |
| 1923.....                | 60,356                                | 11,041   | 1,102                                | 819               | 213                     | 618   | 299  | 61                   | 516                | 564                                 |
| 1924.....                | 58,244                                | 11,337   | 1,074                                | 750               | 215                     | 568   | 321  | 82                   | 511                | 567                                 |
| 1925.....                | 57,189                                | 11,968   | 1,118                                | 784               | 248                     | 725   | 375  | 100                  | 517                | 568                                 |
| 1926.....                | 57,255                                | 11,480   | 1,161                                | 818               | 242                     | 671   | 417  | 117                  | 526                | 568                                 |
| 1927.....                | 56,145                                | 11,616   | 1,175                                | 851               | 217                     | 654   | 422  | 73                   | 545                | 568                                 |
| 1928.....                | 56,561                                | 11,741   | 1,183                                | 835               | 275                     | 801   | 451  | 88                   | 556                | 563                                 |
| 1929.....                | 57,604                                | 11,941   | 1,194                                | 919               | 276                     | 916   | 486  | 89                   | 567                | 554                                 |
| 1930.....                | 57,670                                | 9,454  | 1,011                                | 635               | 270                     | 677   | 483  | 77                   | 566                | 545                                 |
| 1931.....                | 51,812                                | 6,968  | 734                                  | 462               | 190                     | 366   | 407  | 75                   | 519                | 528                                 |
| 1932.....                | 43,351                                | 5,331  | 475                                  | 409               | 113                     | 186   | 354  | 56                   | 450                | 511                                 |
| 1933 <sup>11</sup> ..... | 35,812                                | 6,256  | 426                                  | 353               | 118                     | 215   | 380  | 62                   | 385                | 442                                 |

<sup>1</sup> As of Jan. 1. Includes land, buildings, machinery, and livestock. Estimates are census values for census years. The value of land and buildings for intercensal years is based on the index of land values per acre and a straight-line interpolation of total acreage in farms. Livestock values are annual estimates of the U. S. Department of Agriculture. Value of farm machinery is based on estimated purchases of farm machinery and changes in the prices paid by farmers for farm machinery.

<sup>2</sup> For years 1924-33, see table 463. The estimates for 1909-23 are based on items which represent about 95 percent of the gross income in 1924-33.

<sup>3</sup> Estimates from 1909-24 based on interpolations between census estimates and the index of farm wage rates; 1924-33 upon farm-wage rate, changes in the number of hired laborers per farm, and the number of farms.

<sup>4</sup> From 1909 to 1919 interpolation between census years based on an index of prices paid by farmers for feed and an index of production of feed crops. From 1919 to 1933 estimates are based on prices of feed crops, production of byproducts feeds and sales of feed grains and hay which are not used in industry or exported.

<sup>5</sup> Interpolated between census estimates based on estimated total fertilizer consumption and the U. S. Department of Agriculture index of fertilizer prices paid by farmers.

<sup>6</sup> Value of farm implements interpolated between the 1909, 1914, and 1919 census value of implements produced, after adjustment to represent retail values. Interpolations for other years are based on factory values of farm implements sold in the United States and raised to retail values. Farmers' expenditures for automobiles and trucks are estimated from registrations in principal agricultural States and prices paid by farmers.

<sup>7</sup> Includes the estimated cost of operating trucks, tractors, and one-half of the cost of operating automobiles. Expenditures per vehicle are based upon changes in the prices of gasoline, kerosene, oil and tires, licenses, and estimated annual mileage. Cost of operation is estimated cost per vehicle times estimated number of vehicles on farms.

<sup>8</sup> Annual cotton production multiplied by ginning costs per bale.

<sup>9</sup> Revised estimates of taxes are based on a study of real-estate taxes by States. In adjusting for total taxes it is assumed that the real estate tax is 85 percent and personal property tax is 15 percent of the total.

<sup>10</sup> Interpolations between total farm mortgages for 1910, 1920, 1925, 1928, 1930, using smoothed estimates for 1911-19 derived from value of current agricultural capital, and smooth curve, 1920-30.

<sup>11</sup> Preliminary.

Bureau of Agricultural Economics; tentative estimates of the Bureau

TABLE 465.—*Total population and farm population, United States: Total number Apr. 15, 1910, and yearly Jan. 1, 1920-35, annual movement to and from farms, and annual net change in the farm population 1920-34*<sup>1</sup>

| Year      | Total population<br>Jan. 1 <sup>2</sup> | Farm population     |                                 |                                    |  |  |
|-----------|---|---------------------|---------------------------------|------------------------------------|--|--|
|           |   | Number on<br>Jan. 1 | Persons who during the<br>year— |                                    | Net movement from<br>farms<br>during the<br>year | Net loss of<br>farm population<br>during the<br>year |
|           |   |                     | Left farms<br>for cities        | Arrived at<br>farms from<br>cities |  |  |
|           | <i>Thousands</i>                        | <i>Thousands</i>    | <i>Thousands</i>                | <i>Thousands</i>                   | <i>Thousands</i>                                 | <i>Thousands</i>                                     |
| 1910..... | <sup>3</sup> 91,972                     | <sup>4</sup> 32,077 |                                 |                                    |  |  |
| 1920..... | <sup>3</sup> 105,711                    | <sup>3</sup> 31,614 | 896                             | 560                                | 336  | <sup>5</sup> 89                                      |
| 1921..... | 107,375                                 | 31,703              | 1,323                           | 759                                | 564  | <sup>5</sup> 65                                      |
| 1922..... | 109,040                                 | 31,768              | 2,252                           | 1,115                              | 1,137  | 478  |
| 1923..... | 110,705                                 | 31,290              | 2,162                           | 1,355                              | 807  | 234  |
| 1924..... | 112,370                                 | 31,056              | 2,068                           | 1,581                              | 487  | <sup>6</sup> 8                                       |
| 1925..... | 114,035                                 | 31,064              | 2,038                           | 1,336                              | 702  | 280  |
| 1926..... | 115,700                                 | 30,784              | 2,334                           | 1,427                              | 907  | 503  |
| 1927..... | 117,364                                 | 30,281              | 2,162                           | 1,705                              | 457  | 6  |
| 1928..... | 119,029                                 | 30,275              | 2,120                           | 1,698                              | 422  | 18   |
| 1929..... | 120,694                                 | 30,257              | 2,081                           | 1,604                              | 477  | 88   |
| 1930..... | 122,359                                 | 30,169              | 1,723                           | 1,740                              | <sup>6</sup> 17                                  | <sup>5</sup> 416                                     |
| 1931..... | 123,630                                 | <sup>7</sup> 30,585 | 1,469                           | 1,683                              | <sup>6</sup> 214                                 | <sup>5</sup> 656                                     |
| 1932..... | 124,511                                 | <sup>7</sup> 31,241 | 1,011                           | 1,544                              | <sup>6</sup> 533                                 | 1,001  |
| 1933..... | 125,197                                 | <sup>7</sup> 32,242 | 1,178                           | 951                                | 227  | <sup>5</sup> 267                                     |
| 1934..... | 126,059                                 | <sup>7</sup> 32,509 | 994                             | 783                                | 211  | <sup>5</sup> 270                                     |
| 1935..... | ( <sup>8</sup> )                        | <sup>7</sup> 32,779 |                                 |                                    |  |  |

<sup>1</sup> Unless otherwise stated, these data are revised estimates based upon information furnished by farm families to the Bureau of Agricultural Economics adjusted to the trends indicated by the census data of 1920 and 1930.

<sup>2</sup> Except for 1910 and 1920, these are estimates by the Bureau of the Census.

<sup>3</sup> Census enumerations as of Apr. 15, 1910, and Jan. 1, 1920.

<sup>4</sup> Estimated by the Bureau of the Census.

<sup>5</sup> Net gain in farm population instead of loss.

<sup>6</sup> Net movement to farms during the year, a reversal of the earlier trend.

<sup>7</sup> Estimates since 1930 subject to revision following next census enumeration.

<sup>8</sup> Estimate not available when Yearbook went to press.

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TABLE 466.—*Farm returns, 1925-33*

[Averages of reports of owner operators for their own farms for calendar year]

| Item  | United States |          |          |          |          |          |          |         |         |         | North Atlantic |         | East North Central |          | West North Central |         | South Atlantic |         | South Central |         | Western  |  |
|---|---------------|----------|----------|----------|----------|----------|----------|---------|---------|---------|----------------|---------|--------------------|----------|--------------------|---------|----------------|---------|---------------|---------|----------|--|
|   | 1925          | 1926     | 1927     | 1928     | 1929     | 1930     | 1931     | 1932    | 1933    | 1932    | 1933           | 1932    | 1933               | 1932     | 1933               | 1932    | 1933           | 1932    | 1933          | 1932    | 1933     |  |
| Reports.....number.....   | 15,330        | 13,475   | 13,859   | 11,851   | 11,805   | 6,228    | 7,437    | 6,383   | 6,855   | 903     | 815            | 1,292   | 1,387              | 1,352    | 1,312              | 867     | 921            | 1,532   | 1,817         | 445     | 515      |  |
| Size of farm.....acres.....   | 304           | 315      | 275      | 284      | 270      | 284      | 249      | 233     | 233     | 128     | 134            | 144     | 135                | 144      | 135                | 100     | 100            | 211     | 221           | 538     | 556      |  |
| Value of farm real estate, Jan. 1.....  | \$14,167      | \$13,379 | \$12,543 | \$12,299 | \$12,090 | \$12,000 | \$10,778 | \$8,170 | \$7,527 | \$7,024 | \$6,831        | \$9,087 | \$7,870            | \$12,154 | \$11,023           | \$5,451 | \$5,567        | \$5,256 | \$5,256       | \$0,781 | \$10,853 |  |
| Value of farm personalty, Jan. 1.....   | 2,965         | 2,929    | 2,893    | 3,118    | 3,152    | 3,156    | 2,426    | 1,811   | 1,749   | 2,462   | 2,848          | 1,914   | 1,696              | 2,520    | 2,395              | 1,086   | 1,021          | 1,078   | 1,078         | 2,324   | 2,864    |  |
| Receipts:   |               |          |          |          |          |          |          |         |         |         |                |         |                    |          |                    |         |                |         |               |         |          |  |
| Crop sales.....   | 993           | 928      | 978      | 946      | 1,029    | 779      | 572      | 337     | 523     | 430     | 613            | 208     | 254                | 223      | 305                | 308     | 692            | 410     | 616           | 514     | 1,024    |  |
| Sales of livestock.....   | 897           | 894      | 851      | 936      | 923      | 765      | 471      | 313     | 313     | 228     | 228            | 378     | 350                | 611      | 621                | 170     | 147            | 127     | 124           | 276     | 318      |  |
| Sales of livestock products.....  | 585           | 589      | 638      | 680      | 681      | 635      | 482      | 359     | 356     | 1,013   | 1,029          | 459     | 514                | 250      | 267                | 173     | 213            | 98      | 131           | 341     | 425      |  |
| Miscellaneous, other.....   | 76            | 39       | 38       | 37       | 37       | 32       | 24       | 14      | 17      | 25      | 40             | 15      | 13                 | 10       | 10                 | 10      | 17             | 9       | 8             | 24      | 25       |  |
| Total.....  | 2,551         | 2,448    | 2,505    | 2,608    | 2,669    | 2,211    | 1,549    | 1,014   | 1,222   | 1,706   | 1,894          | 1,061   | 1,140              | 1,103    | 1,206              | 751     | 1,069          | 644     | 879           | 1,155   | 1,790    |  |
| Cash outlay:  |               |          |          |          |          |          |          |         |         |         |                |         |                    |          |                    |         |                |         |               |         |          |  |
| Hired labor.....  | 386           | 396      | 397      | 394      | 390      | 378      | 304      | 185     | 220     | 204     | 328            | 130     | 142                | 158      | 135                | 189     | 275            | 176     | 197           | 222     | 434      |  |
| Livestock bought.....   | 242           | 242      | 238      | 238      | 238      | 172      | 102      | 87      | 79      | 95      | 101            | 92      | 72                 | 157      | 157                | 114     | 60             | 59      | 41            | 38      | 109      |  |
| Feed bought.....  | 244           | 232      | 243      | 262      | 276      | 276      | 184      | 118     | 134     | 345     | 383            | 100     | 118                | 130      | 121                | 62      | 86             | 34      | 53            | 126     | 144      |  |
| Fertilizer.....   | 69            | 73       | 64       | 67       | 79       | 78       | 55       | 30      | 41      | 90      | 102            | 24      | 23                 | 3        | 3                  | 115     | 106            | 26      | 26            | 7       | 18       |  |
| Seed.....   | 47            | 48       | 49       | 46       | 43       | 43       | 34       | 31      | 26      | 44      | 47             | 28      | 25                 | 47       | 29                 | 19      | 20             | 15      | 15            | 41      | 37       |  |
| Fuels on farm property.....   | 191           | 183      | 180      | 184      | 187      | 196      | 183      | 140     | 127     | 155     | 146            | 168     | 127                | 211      | 178                | 90      | 75             | 85      | 103           | 206     | 206      |  |
| Fuels and tools.....  | 119           | 130      | 129      | 151      | 159      | 118      | 62       | 34      | 44      | 62      | 61             | 41      | 41                 | 41       | 52                 | 20      | 27             | 18      | 31            | 41      | 84       |  |
| Miscellaneous, other.....   | 179           | 170      | 157      | 191      | 191      | 191      | 167      | 114     | 139     | 168     | 197            | 118     | 121                | 145      | 150                | 68      | 111            | 59      | 67            | 202     | 364      |  |
| Total.....  | 1,477         | 1,473    | 1,457    | 1,518    | 1,572    | 1,452    | 1,091    | 797     | 807     | 1,253   | 1,365          | 703     | 699                | 892      | 782                | 623     | 799            | 466     | 512           | 882     | 1,396    |  |
| Receipts less cash outlay.....  | 1,074         | 975      | 1,048    | 1,090    | 1,097    | 759      | 458      | 287     | 416     | 453     | 529            | 358     | 471                | 211      | 424                | 128     | 310            | 178     | 307           | 273     | 394      |  |
| Increase in inventory of personal property.....                                     | 223           | 198      | 242      | 244      | 201      | -221     | -304     | -101    | 101     | -273    | 90             | -239    | 71                 | -309     | 78                 | -87     | 125            | -90     | 65            | -95     | 344      |  |
| Net result.....   | 1,267         | 1,133    | 1,290    | 1,334    | 1,298    | 638      | 154      | 66      | 616     | 180     | 619            | 119     | 542                | -98      | 502                | 41      | 435            | 88      | 432           | 178     | 738      |  |
| Interest paid.....  | 225           | 215      | 201      | 202      | 199      | 199      | 196      | 173     | 190     | 116     | 110            | 170     | 159                | 204      | 263                | 90      | 88             | 125     | 111           | 239     | 289      |  |
| Spent for farm improvements.....  | 131           | 128      | 141      | 126      | 125      | 92       | 57       | 29      | 40      | 62      | 60             | 30      | 32                 | 16       | 29                 | 32      | 53             | 22      | 39            | 20      | 34       |  |
| Value of food produced and used on the farm.....                                    | 274           | 282      | 273      | 269      | 262      | 242      | 200      | 163     | 184     | 183     | 183            | 156     | 158                | 156      | 153                | 188     | 198            | 145     | 152           | 144     | 152      |  |
| Value of family labor, including owner.....   | 793           | 779      | 768      | 768      | 772      | 716      | 608      | 448     | 470     | 616     | 640            | 498     | 501                | 527      | 532                | 298     | 333            | 286     | 331           | 605     | 620      |  |
| Change in value of real estate during the year (minus sign (-) shows decrease)..... | +173          | +2       | +61      | +72      | +27      | -757     | -1,281   | -1,036  | +121    | -634    | -28            | -1,167  | +169               | -1,910   | +135               | -503    | +134           | -656    | +197          | -1,070  | -67      |  |

1 Average of farms for which the item was reported.

Bureau of Agricultural Economics; compiled from reports of individual farms operated by their owners.

Division averages for 1925-28 in 1927 Yearbook, table 475; for 1927-28 in 1930 Yearbook, table 510; for 1929-30 in 1932 Yearbook, table 489; and for 1931-32 in 1934 Yearbook, table 464.



TABLE 467.—Farm returns: Proportion of farmers obtaining net results within specified ranges, 1925-33

| Item  | United States |          |          |          |          |          |          |          |          |          | North Atlantic |          | East North Central |          | West North Central |          | South Atlantic |          | South Central |          | Western  |          |          |
|---|---------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------------|----------|--------------------|----------|--------------------|----------|----------------|----------|---------------|----------|----------|----------|----------|
|   |               |          |          |          |          |          |          |          |          |          | 1932           | 1933     | 1932               | 1933     | 1932               | 1933     | 1932           | 1933     | 1932          | 1933     | 1932     | 1933     |          |
|   | Per-cent      | Per-cent | Per-cent | Per-cent | Per-cent | Per-cent | Per-cent | Per-cent | Per-cent | Per-cent | Per-cent       | Per-cent | Per-cent           | Per-cent | Per-cent           | Per-cent | Per-cent       | Per-cent | Per-cent      | Per-cent | Per-cent | Per-cent | Per-cent |
| Reports.....                                | 15,330        | 13,476   | 13,859   | 11,851   | 11,805   | 6,228    | 7,437    | 6,383    | 6,855    | 903      | 1,202          | 1,387    | 1,382              | 1,312    | 867                | 921      | 1,582          | 1,817    | 445           | 515      |          |          |          |
| Size of farm.....                           | 304           | 315      | 275      | 284      | 270      | 284      | 249      | 233      | 234      | 128      | 134            | 144      | 136                | 333      | 337                | 190      | 178            | 211      | 221           | 538      | 556      |          |          |
| Value of farm property Jan. 1 per farm..... | 17,122        | 16,308   | 15,436   | 15,417   | 15,242   | 15,165   | 13,204   | 9,081    | 9,276    | 9,486    | 9,179          | 11,001   | 9,575              | 14,074   | 13,418             | 6,537    | 6,340          | 6,593    | 6,334         | 12,105   | 13,717   |          |          |
| Net result per farm.....                    | 1,237         | 1,133    | 1,290    | 1,334    | 1,208    | 538      | 154      | 66       | 516      | 180      | 619            | 119      | 542                | -98      | 502                | 41       | 435            | 88       | 432           | 178      | 738      |          |          |
| Proportion obtaining:                       | Per-cent      | Per-cent | Per-cent | Per-cent | Per-cent | Per-cent | Per-cent | Per-cent | Per-cent | Per-cent | Per-cent       | Per-cent | Per-cent           | Per-cent | Per-cent           | Per-cent | Per-cent       | Per-cent | Per-cent      | Per-cent | Per-cent | Per-cent | Per-cent |
| \$5,000 or more.....                        | 3.00          | 2.29     | 3.19     | 3.12     | 2.94     | 1.03     | 0.27     | 0.07     | 0.64     | 0.25     | 1.11           | 0.36     | 1.37               | 0.22     | 1.07               | 0.35     | 0.76           | 0.06     | 0.30          | 0.23     | 2.33     |          |          |
| \$3,000 to \$4,999.....                     | 6.82          | 5.49     | 6.42     | 6.77     | 6.24     | 2.87     | 0.63     | 0.18     | 1.28     | 0.25     | 2.21           | 0.08     | 1.37               | 0.22     | 1.07               | 0.35     | 0.76           | 0.06     | 0.30          | 0.23     | 2.33     |          |          |
| \$2,500 to \$2,999.....                     | 4.03          | 3.69     | 3.86     | 4.06     | 4.20     | 1.90     | 0.63     | 0.25     | 1.88     | 0.37     | 1.78           | 0.23     | 1.73               | 0.29     | 1.14               | 1.60     | 1.12           | 0.54     | 0.94          | 1.12     | 1.36     |          |          |
| \$2,000 to \$2,499.....                     | 9.26          | 5.46     | 6.53     | 6.35     | 6.01     | 3.20     | 0.90     | 0.36     | 1.85     | 0.73     | 1.77           | 0.64     | 1.73               | 0.29     | 3.27               | 2.23     | 1.09           | 0.61     | 1.08          | 0.67     | 2.91     |          |          |
| \$1,500 to \$1,999.....                     | 9.92          | 9.05     | 9.58     | 10.35    | 10.35    | 5.88     | 2.14     | 0.97     | 3.28     | 3.07     | 5.21           | 0.93     | 3.03               | 5.1      | 5.41               | 0.69     | 1.63           | 0.25     | 1.76          | 1.80     | 3.50     |          |          |
| \$1,000 to \$1,499.....                     | 15.44         | 14.09    | 15.46    | 15.23    | 14.89    | 9.41     | 4.65     | 2.14     | 7.82     | 4.42     | 9.53           | 8.72     | 7.75               | 2.75     | 9.68               | 1.38     | 6.65           | 1.14     | 6.50          | 6.07     | 8.93     |          |          |
| \$500 to \$999.....                         | 21.79         | 22.10    | 22.07    | 22.07    | 22.63    | 17.23    | 14.84    | 9.86     | 19.18    | 13.00    | 19.60          | 12.70    | 23.07              | 9.84     | 20.35              | 6.08     | 16.29          | 6.57     | 17.17         | 13.71    | 17.28    |          |          |
| \$0 to \$499.....                           | 22.32         | 26.43    | 23.98    | 23.19    | 24.76    | 29.03    | 39.77    | 43.08    | 48.02    | 38.40    | 40.42          | 45.43    | 48.09              | 83.60    | 32.93              | 43.83    | 66.46          | 53.73    | 60.54         | 35.28    | 40.39    |          |          |
| \$0 to -\$499.....                          | 7.81          | 8.56     | 6.08     | 7.20     | 6.37     | 19.70    | 23.62    | 33.38    | 14.27    | 23.46    | 17.17          | 30.34    | 12.04              | 33.65    | 17.00              | 40.72    | 16.29          | 34.96    | 11.11         | 30.56    | 16.73    |          |          |
| -\$500 to -\$999.....                       | 1.54          | 1.69     | 1.28     | 1.04     | 1.01     | 5.64     | 8.87     | 6.00     | 1.83     | 8.47     | 1.77           | 4.34     | 6.65               | 11.21    | 6.34               | 4.27     | 2.20           | 2.28     | 5.6           | 6.74     | 3.60     |          |          |
| -\$1,000 or more.....                       | 1.07          | 1.26     | .95      | .62      | .55      | 4.19     | 6.78     | 3.28     | .95      | 2.58     | .44            | 2.86     | .22                | 7.89     | 2.82               | 1.73     | .76            | .44      | 3.59          | 2.52     |          |          |          |
| All farms reporting.....                    | 100.00        | 100.00   | 100.00   | 100.00   | 100.00   | 100.00   | 100.00   | 100.00   | 100.00   | 100.00   | 100.00         | 100.00   | 100.00             | 100.00   | 100.00             | 100.00   | 100.00         | 100.00   | 100.00        | 100.00   | 100.00   | 100.00   | 100.00   |

The reports are those tabulated in table 466 (preceding). For distribution by geographical divisions in earlier years, see 1927 Yearbook, table 476; 1930 Yearbook, table 511; 1932 Yearbook, table 460; and 1934 Yearbook, table 460.

TABLE 468.—Cotton: Estimated cost of production, by selected States and regions, 1933<sup>1</sup>

| State or region                                    | Acre-<br>age<br>har-<br>vested | Pro-<br>duction<br>of lint<br>in 500-<br>pound<br>gross-<br>weight<br>bales | Aver-<br>age<br>yield<br>of lint<br>per<br>acre | Gross cost per acre     |                           |              |                                  |      |              |                         | Credit<br>per<br>acre for<br>cotton-<br>seed | Net cost of lint |       |                     |                     |           |
|--|--------------------------------|---|---|-------------------------|---------------------------|--------------|----------------------------------|------|--------------|-------------------------|--|------------------|-------|---------------------|---------------------|-----------|
|  |                                |   |   | Prepare<br>and<br>plant | Culti-<br>vate<br>and hoe | Har-<br>vest | Ferti-<br>lizer<br>and<br>manure | Seed | Gin-<br>ning | Mis-<br>cella-<br>neous |  | Land<br>rent     | Total | Per acre            |                     | Per pound |
|  |                                |   |   |                         |                           |              |                                  |      |              |                         |  |                  |       | Includ-<br>ing rent | Exclud-<br>ing rent |           |
| STATE  |                                |   |   |                         |                           |              |                                  |      |              |                         |  |                  |       |                     |                     |           |
| North Carolina.....                                | 1,090                          | 684   | 314   | 3.54                    | 6.45                      | 6.74         | 4.31                             | 0.60 | 2.34         | 3.24                    | 4.74   | 30.05            | 25.99 | 21.25               | 8.3                 | 6.8       |
| South Carolina.....                                | 1,379                          | 786   | 266   | 3.54                    | 4.71                      | 5.05         | 3.74                             | .60  | 1.84         | 3.63                    | 3.15   | 26.26            | 22.98 | 19.33               | 8.6                 | 7.5       |
| Georgia.....                                       | 2,147                          | 1,057   | 257   | 3.73                    | 4.63                      | 5.13         | 2.96                             | .69  | 1.98         | 3.15                    | 3.83   | 25.00            | 3.65  | 18.52               | 8.3                 | 7.2       |
| Alabama.....                                       | 2,378                          | 969   | 204   | 3.51                    | 4.39                      | 3.85         | 2.53                             | .63  | 1.63         | 2.72                    | 3.08   | 22.34            | 2.70  | 16.64               | 9.6                 | 8.1       |
| Tennessee.....                                     | 884                            | 443   | 251   | 3.23                    | 5.01                      | 6.45         | 1.23                             | .65  | 2.26         | 3.06                    | 4.68   | 26.20            | 3.04  | 23.16               | 9.2                 | 7.4       |
| Mississippi.....                                   | 3,150                          | 203   | 306   | 3.02                    | 5.20                      | 4.41         | 1.01                             | .77  | 2.07         | 2.78                    | 4.56   | 22.86            | 3.25  | 16.05               | 10.2                | 7.9       |
| Arkansas.....                                      | 1,295                          | 477   | 184   | 3.23                    | 5.55                      | 4.47         | .79                              | .69  | 1.64         | 3.38                    | 4.38   | 24.09            | 2.39  | 21.70               | 11.8                | 9.4       |
| Louisiana.....                                     | 2,583                          | 1,041   | 202   | 3.53                    | 5.12                      | 4.66         | .60                              | .69  | 2.02         | 2.22                    | 4.48   | 23.32            | 2.86  | 20.46               | 15.98               | 7.9       |
| Oklahoma.....                                      | 2,915                          | 1,260   | 217   | 2.40                    | 3.27                      | 5.57         | .16                              | .56  | 2.03         | 2.09                    | 3.19   | 19.32            | 3.30  | 17.02               | 13.83               | 7.8       |
| Texas.....   | 11,488                         | 4,493   | 163   | 2.37                    | 3.49                      | 4.35         | .17                              | .60  | 2.10         | 2.14                    | 3.95   | 10.15            | 2.58  | 16.57               | 12.64               | 6.5       |
| REGION   |                                |   |   |                         |                           |              |                                  |      |              |                         |  |                  |       |                     |                     |           |
| Coastal Plain.....                                 | 4,487                          | 2,000   | 223   | 3.25                    | 4.62                      | 4.40         | 2.70                             | .68  | 1.83         | 3.11                    | 3.10   | 23.69            | 3.13  | 20.56               | 17.46               | 9.2       |
| Piedmont.....                                      | 2,524                          | 1,317   | 261   | 3.08                    | 5.03                      | 4.92         | 3.40                             | .64  | 1.82         | 3.34                    | 3.40   | 26.66            | 3.48  | 23.18               | 19.78               | 8.9       |
| Eastern hill areas.....                            | 2,830                          | 1,305   | 231   | 3.75                    | 4.74                      | 4.60         | 1.90                             | .62  | 1.92         | 3.83                    | 3.40   | 24.05            | 2.94  | 21.11               | 17.22               | 9.1       |
| River-bottom areas.....                            | 2,954                          | 1,457   | 247   | 3.03                    | 5.76                      | 6.17         | .50                              | .76  | 2.62         | 2.87                    | 5.74   | 27.45            | 3.66  | 23.79               | 18.05               | 9.6       |
| Western hill areas.....                            | 5,845                          | 1,930   | 182   | 3.14                    | 4.68                      | 4.14         | .62                              | .65  | 1.76         | 2.42                    | 3.57   | 20.88            | 2.41  | 18.47               | 14.90               | 10.1      |
| Gulf coast prairie and Texas black<br>prairie..... | 4,958                          | 1,952   | 198   | 2.21                    | 3.61                      | 4.54         | .13                              | .61  | 2.14         | 1.99                    | 4.40   | 19.72            | 2.72  | 17.00               | 12.51               | 8.6       |
| Western dry areas.....                             | 6,265                          | 2,644   | 203   | 2.20                    | 2.78                      | 4.78         | .11                              | .55  | 2.22         | 1.94                    | 3.42   | 18.00            | 2.41  | 15.59               | 12.17               | 7.7       |
| Irrigated areas.....                               | 590                            | 497   | 421   | 5.22                    | 4.83                      | 11.78        | .27                              | .63  | 4.61         | 10.38                   | 9.69   | 47.41            | 4.80  | 42.55               | 32.86               | 7.8       |
| United States.....                                 | 26,955                         | 13,032  | 218   | 2.97                    | 4.24                      | 4.84         | 1.07                             | .63  | 2.09         | 2.65                    | 3.97   | 22.46            | 2.88  | 19.58               | 15.61               | 9.0       |
|  |                                |   |   |                         |                           |              |                                  |      |              |                         |  |                  |       |                     |                     | 7.2       |

<sup>1</sup> Preliminary estimates. In computing averages, data were weighted by acreage harvested.<sup>2</sup> Obtained by dividing the production of lint in terms of 500-pound gross-weight bales by the acreage harvested.<sup>3</sup> Includes hauling and spreading manure.<sup>4</sup> Includes picking and snapping cotton, baling to gin, and hauling lint and cottonseed to local markets.<sup>5</sup> Includes miscellaneous labor, irrigation (including water), dusting, picking sacks and sheels, crop insurance, use of implements, use of storage buildings, and overhead.<sup>6</sup> Includes the lower and upper coastal plain of Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, and the black prairie belt of Alabama and Mississippi.<sup>7</sup> Includes the rolling and hilly uplands of Virginia, North Carolina, South Carolina, Georgia, and Alabama, which border the Blue Ridge Mountains on the east and south.<sup>8</sup> Includes Tennessee, exclusive of Lake County, the hilly cotton lands of northern Mississippi, northern Alabama, and northern Georgia, and western North Carolina.<sup>9</sup> Includes the principal bottom lands of the Mississippi, the Arkansas, and the Red Rivers.<sup>10</sup> Includes the hilly lands of Arkansas, Louisiana, southern Missouri, eastern Texas, and eastern Oklahoma.<sup>11</sup> Includes the Gulf coast prairie of Texas and Louisiana and the black waxy prairie of Texas.<sup>12</sup> Includes the dry-land areas of western Oklahoma, western Texas, and eastern New Mexico.<sup>13</sup> Includes the irrigated cotton lands of California, Arizona, New Mexico, and Texas.<sup>14</sup> Includes the 16 States of Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Tennessee, Mississippi, Louisiana, Arkansas, Missouri, Oklahoma, Texas, New Mexico, Arizona, and California, which produced 99.9 percent of the United States cotton crop of 1933.

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| Oats:  | 2,572  | 59,901  | 22.1 | 3.75 | 3.38 | .70 | 1.70 | 1.08 | 2.38 | 3.13 | 16.12 | 2.48 | 13.64 | 10.51 | .62 | .48 |
|--|--------|---------|------|------|------|-----|------|------|------|------|-------|------|-------|-------|-----|-----|
| Eastern:   | 2,572  | 59,901  | 22.1 | 3.75 | 3.38 | .70 | 1.70 | 1.08 | 2.38 | 3.13 | 16.12 | 2.48 | 13.64 | 10.51 | .62 | .48 |
| North 4  | 2,572  | 59,901  | 22.1 | 3.75 | 3.38 | .70 | 1.70 | 1.08 | 2.38 | 3.13 | 16.12 | 2.48 | 13.64 | 10.51 | .62 | .48 |
| South 5  | 2,572  | 59,901  | 22.1 | 3.75 | 3.38 | .70 | 1.70 | 1.08 | 2.38 | 3.13 | 16.12 | 2.48 | 13.64 | 10.51 | .62 | .48 |
| Ohio and Indiana   | 2,572  | 59,901  | 22.1 | 3.75 | 3.38 | .70 | 1.70 | 1.08 | 2.38 | 3.13 | 16.12 | 2.48 | 13.64 | 10.51 | .62 | .48 |
| Michigan, Wisconsin, and Minnesota                         | 2,963  | 54,826  | 18.5 | 1.62 | 2.15 | .42 | .47  | .53  | 1.60 | 2.21 | 10.07 | 1.13 | 8.94  | 6.73  | .50 | .37 |
| Illinois and Iowa  | 8,082  | 183,829 | 22.8 | 2.20 | 2.23 | .53 | .40  | .55  | 1.96 | 3.16 | 11.03 | 1.26 | 9.77  | 6.61  | .43 | .29 |
| Missouri, Nebraska, Kansas, South Dakota, and North Dakota | 10,232 | 222,349 | 21.6 | 1.06 | 1.90 | .36 | .10  | .42  | 1.59 | 4.88 | 9.81  | .69  | 9.12  | 4.74  | .42 | .22 |
| Southwestern 6   | 7,917  | 109,342 | 13.8 | 1.35 | 1.71 | .33 | .14  | .35  | 2.02 | 2.46 | 8.36  | .45  | 7.91  | 5.45  | .57 | .39 |
| Western 7  | 2,469  | 44,195  | 17.9 | 1.40 | 1.84 | .46 | .06  | .51  | 1.31 | 1.90 | 7.57  | .37  | 7.20  | 5.21  | .40 | .26 |
| United States  | 1,469  | 42,631  | 29.0 | 2.90 | 2.56 | .83 | .24  | .66  | 2.51 | 2.88 | 12.58 | 1.17 | 11.41 | 8.53  | .39 | .26 |
|  | 36,701 | 731,500 | 19.9 | 1.72 | 2.08 | .45 | .35  | .52  | 1.84 | 3.23 | 10.19 | .92  | 9.27  | 6.04  | .47 | .30 |

<sup>1</sup> Preliminary estimates. States grouped mainly on a basis of production practices and yields. In computing averages, data were weighted by acreage harvested.

<sup>2</sup> Includes threshing for wheat and oats.

<sup>3</sup> Includes charges for water for irrigation, twine and sacks, crop insurance, use of implements, use of storage buildings, overhead, and for wheat a charge for expenses incurred on acreage abandoned and not harvested.

<sup>4</sup> Includes the 6 New England States, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, Kentucky, and Tennessee.

<sup>5</sup> Includes the States of North Carolina, South Carolina, Georgia, Florida, Alabama, and Mississippi.

<sup>6</sup> Includes the States of Arkansas, Louisiana, Oklahoma, and Texas.

<sup>7</sup> Includes the States of Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, and California.

<sup>8</sup> Includes the 6 New England States, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, and Kentucky.

<sup>9</sup> Includes the States of North Carolina, South Carolina, Georgia, Tennessee, Alabama, and Arkansas.

<sup>10</sup> Includes the States of Idaho, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, and California.

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TABLE 470.—*Index numbers of prices paid by farmers, 1910-34*

[Calendar years 1910-14=100]

| Year      | Commodities used in production |           |            |   |                        |                   |  | Wage rates paid to hired labor | Commodities bought for use in production plus wages paid to hired labor | Commodities bought for family maintenance <sup>2</sup> | All commodities bought for use in production and family maintenance |
|-----------|--------------------------------|-----------|------------|---|------------------------|-------------------|--|--------------------------------|---|--|---|
|           | Feed                           | Machinery | Fertilizer | Building materials for other than house | Equipment and supplies | Seed <sup>1</sup> | All commodities bought for use in production |                                |   |  |   |
|           |                                |           |            |   |                        |                   |  |                                |   |  |   |
| 1910..... | 93                             | 102       | 99         | 100                                     | 101                    | -----             | 98   | 97                             | 98  | 98   | 98  |
| 1911..... | 107                            | 101       | 99         | 102                                     | 100                    | -----             | 103  | 97                             | 101   | 100  | 101   |
| 1912..... | 91                             | 102       | 100        | 103                                     | 100                    | 103               | 98   | 101                            | 99  | 101  | 100   |
| 1913..... | 107                            | 98        | 102        | 101                                     | 100                    | 97                | 102  | 104                            | 103   | 100  | 101   |
| 1914..... | 102                            | 96        | 100        | 93                                      | 99                     | 99                | 99   | 101                            | 99  | 102  | 100   |
| 1915..... | 100                            | 100       | 112        | 102                                     | 106                    | 120               | 104  | 102                            | 103   | 107  | 105   |
| 1916..... | 130                            | 107       | 120        | 117                                     | 129                    | 142               | 124  | 112                            | 121   | 124  | 124   |
| 1917..... | 184                            | 126       | 137        | 137                                     | 156                    | 149               | 151  | 140                            | 149   | 147  | 149   |
| 1918..... | 193                            | 155       | 170        | 161                                     | 181                    | 190               | 174  | 176                            | 174   | 177  | 176   |
| 1919..... | 211                            | 161       | 182        | 189                                     | 180                    | 280               | 192  | 206                            | 195   | 210  | 202   |
| 1920..... | 137                            | 167       | 186        | 205                                     | 189                    | 152               | 174  | 239                            | 189   | 222  | 201   |
| 1921..... | 97                             | 156       | 156        | 156                                     | 152                    | 134               | 141  | 150                            | 143   | 161  | 152   |
| 1922..... | 123                            | 142       | 129        | 159                                     | 140                    | 130               | 139  | 146                            | 141   | 156  | 149   |
| 1923..... | 134                            | 146       | 126        | 161                                     | 136                    | 142               | 141  | 166                            | 147   | 160  | 152   |
| 1924..... | 142                            | 152       | 120        | 161                                     | 133                    | 151               | 143  | 166                            | 148   | 159  | 152   |
| 1925..... | 141                            | 153       | 129        | 164                                     | 140                    | 172               | 147  | 168                            | 152   | 164  | 157   |
| 1926..... | 137                            | 154       | 126        | 162                                     | 144                    | 214               | 146  | 171                            | 152   | 162  | 155   |
| 1927..... | 138                            | 154       | 121        | 160                                     | 141                    | 197               | 145  | 170                            | 151   | 159  | 153   |
| 1928..... | 148                            | 154       | 131        | 153                                     | 133                    | 179               | 148  | 169                            | 153   | 160  | 155   |
| 1929..... | 145                            | 153       | 130        | 159                                     | 136                    | 185               | 147  | 170                            | 153   | 158  | 153   |
| 1930..... | 132                            | 152       | 126        | 155                                     | 131                    | 174               | 140  | 152                            | 143   | 148  | 145   |
| 1931..... | 93                             | 150       | 115        | 139                                     | 116                    | 152               | 122  | 116                            | 120   | 126  | 124   |
| 1932..... | 69                             | 141       | 99         | 126                                     | 107                    | 102               | 107  | 86                             | 102   | 108  | 107   |
| 1933..... | 79                             | 137       | 96         | 129                                     | 103                    | 95                | 108  | 80                             | 101   | 109  | 109   |
| 1934..... | 110                            | 144       | 104        | 146                                     | 109                    | 140               | 125  | 90                             | 117   | 122  | 123   |

<sup>1</sup> 1912-14=100.<sup>2</sup> Includes food, clothing, household operating expenses, furniture and furnishings, and building material for house.

Bureau of Agricultural Economics; compiled from prices reported to the Department of Agriculture by retail dealers throughout the United States. The prices used in constructing the above index numbers of prices paid by farmers are for constant quantities and sizes, but are not adjusted for changes in quality. Over a period of years marked changes may occur in the quality of certain commodities. For example, a study by the American Society of Agricultural Engineers indicated an improvement in quality of farm machinery of about 70 percent between 1910-14 and 1932.

The index numbers include only commodities bought by farmers; the commodities being weighted according to purchases reported by actual farmers in farm-management and rural-life studies from 1920 to 1925.

TABLE 471.—*Index numbers of farm prices, by groups, 1910-34*

[August 1909-July 1914=100]

| Year      | Calendar year |                       |        |                |                   |              |            | Year beginning July 1 of year shown |                       |        |                |                   |              |            |
|-----------|---------------|-----------------------|--------|----------------|-------------------|--------------|------------|-------------------------------------|-----------------------|--------|----------------|-------------------|--------------|------------|
|           | Grains        | Cotton and cottonseed | Fruits | Dairy products | Chickens and eggs | Meat animals | All groups | Grains                              | Cotton and cottonseed | Fruits | Dairy products | Chickens and eggs | Meat animals | All groups |
| 1910..... | 104           | 113                   | 101    | 99             | 104               | 103          | 102        | 95                                  | 114                   | 103    | 96             | 95                | 94           | 98         |
| 1911..... | 96            | 101                   | 102    | 95             | 91                | 87           | 95         | 107                                 | 84                    | 100    | 100            | 97                | 88           | 98         |
| 1912..... | 106           | 87                    | 94     | 102            | 100               | 95           | 100        | 93                                  | 93                    | 95     | 104            | 97                | 104          | 98         |
| 1913..... | 92            | 97                    | 107    | 105            | 101               | 108          | 101        | 97                                  | 99                    | 109    | 103            | 107               | 111          | 104        |
| 1914..... | 102           | 85                    | 91     | 102            | 106               | 112          | 101        | 120                                 | 69                    | 74     | 104            | 103               | 108          | 98         |
| 1915..... | 120           | 77                    | 82     | 103            | 101               | 104          | 98         | 109                                 | 94                    | 90     | 104            | 104               | 110          | 103        |
| 1916..... | 126           | 119                   | 100    | 109            | 116               | 120          | 118        | 172                                 | 148                   | 111    | 120            | 137               | 143          | 146        |
| 1917..... | 217           | 187                   | 118    | 135            | 155               | 174          | 175        | 230                                 | 229                   | 146    | 148            | 168               | 193          | 192        |
| 1918..... | 227           | 245                   | 172    | 163            | 186               | 203          | 202        | 227                                 | 233                   | 179    | 175            | 197               | 211          | 206        |
| 1919..... | 233           | 247                   | 178    | 186            | 209               | 207          | 213        | 248                                 | 285                   | 198    | 196            | 219               | 191          | 228        |
| 1920..... | 232           | 248                   | 191    | 198            | 223               | 174          | 211        | 165                                 | 140                   | 151    | 178            | 193               | 140          | 157        |
| 1921..... | 112           | 101                   | 157    | 156            | 162               | 109          | 125        | 103                                 | 129                   | 188    | 144            | 151               | 108          | 128        |
| 1922..... | 106           | 156                   | 174    | 143            | 141               | 114          | 132        | 110                                 | 194                   | 147    | 152            | 144               | 111          | 138        |
| 1923..... | 113           | 216                   | 137    | 159            | 146               | 107          | 142        | 112                                 | 225                   | 121    | 158            | 144               | 105          | 142        |
| 1924..... | 129           | 212                   | 125    | 149            | 149               | 110          | 143        | 156                                 | 189                   | 153    | 145            | 160               | 126          | 149        |
| 1925..... | 157           | 177                   | 172    | 153            | 163               | 140          | 156        | 142                                 | 151                   | 163    | 154            | 160               | 146          | 154        |
| 1926..... | 131           | 122                   | 138    | 152            | 159               | 147          | 145        | 125                                 | 106                   | 121    | 154            | 152               | 143          | 136        |
| 1927..... | 128           | 128                   | 144    | 155            | 144               | 140          | 139        | 135                                 | 154                   | 182    | 155            | 148               | 142          | 147        |
| 1928..... | 130           | 152                   | 176    | 158            | 153               | 151          | 149        | 118                                 | 150                   | 142    | 159            | 158               | 158          | 146        |
| 1929..... | 120           | 144                   | 141    | 157            | 162               | 156          | 146        | 117                                 | 130                   | 168    | 147            | 154               | 150          | 143        |
| 1930..... | 100           | 102                   | 162    | 137            | 129               | 133          | 126        | 82                                  | 79                    | 126    | 122            | 109               | 112          | 104        |
| 1931..... | 63            | 63                    | 98     | 108            | 100               | 92           | 87         | 52                                  | 48                    | 86     | 96             | 89                | 73           | 73         |
| 1932..... | 44            | 47                    | 82     | 83             | 82                | 63           | 65         | 43                                  | 51                    | 75     | 78             | 80                | 60           | 62         |
| 1933..... | 62            | 64                    | 74     | 82             | 75                | 60           | 70         | 79                                  | 83                    | 88     | 90             | 80                | 62           | 81         |
| 1934..... | 93            | 99                    | 100    | 96             | 89                | 68           | 90         |                                     |                       |        |                |                   |              |            |

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See footnotes, table 472.

TABLE 472.—*Index numbers of farm prices, United States, 1910-34, as revised in 1934*

[August 1909-July 1914=100]

| Group and year | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Average |
|----------------|------|------|------|------|-----|------|------|------|-------|------|------|------|---------|
| GRAINS         |      |      |      |      |     |      |      |      |       |      |      |      |         |
| 1910.....      | 110  | 112  | 112  | 109  | 107 | 105  | 107  | 106  | 102   | 97   | 92   | 91   | 104     |
| 1911.....      | 91   | 90   | 89   | 90   | 92  | 94   | 97   | 99   | 101   | 104  | 103  | 102  | 96      |
| 1912.....      | 104  | 107  | 110  | 117  | 123 | 121  | 115  | 106  | 100   | 95   | 88   | 83   | 106     |
| 1913.....      | 85   | 87   | 87   | 88   | 92  | 94   | 93   | 95   | 98    | 97   | 96   | 96   | 92      |
| 1914.....      | 97   | 97   | 98   | 99   | 101 | 99   | 97   | 104  | 111   | 109  | 108  | 111  | 102     |
| 1915.....      | 123  | 135  | 136  | 138  | 139 | 126  | 118  | 114  | 105   | 101  | 99   | 102  | 120     |
| 1916.....      | 112  | 115  | 111  | 112  | 112 | 110  | 118  | 128  | 138   | 147  | 158  | 157  | 126     |
| 1917.....      | 160  | 168  | 178  | 217  | 251 | 245  | 249  | 247  | 232   | 223  | 214  | 214  | 217     |
| 1918.....      | 219  | 228  | 236  | 236  | 233 | 228  | 228  | 229  | 229   | 222  | 216  | 217  | 227     |
| 1919.....      | 217  | 215  | 220  | 234  | 245 | 247  | 250  | 250  | 235   | 225  | 223  | 222  | 233     |
| 1920.....      | 245  | 246  | 249  | 263  | 276 | 284  | 266  | 241  | 222   | 194  | 158  | 139  | 232     |
| 1921.....      | 138  | 136  | 132  | 118  | 116 | 117  | 109  | 104  | 101   | 96   | 89   | 90   | 112     |
| 1922.....      | 93   | 103  | 113  | 115  | 116 | 111  | 105  | 100  | 96    | 100  | 106  | 110  | 106     |
| 1923.....      | 113  | 114  | 117  | 121  | 122 | 118  | 111  | 108  | 110   | 112  | 110  | 108  | 113     |
| 1924.....      | 110  | 113  | 114  | 113  | 114 | 116  | 130  | 141  | 140   | 150  | 145  | 158  | 129     |
| 1925.....      | 173  | 179  | 173  | 153  | 160 | 164  | 153  | 158  | 149   | 137  | 141  | 143  | 157     |
| 1926.....      | 146  | 143  | 136  | 133  | 134 | 133  | 127  | 129  | 122   | 124  | 122  | 121  | 131     |
| 1927.....      | 121  | 123  | 122  | 120  | 127 | 140  | 139  | 137  | 134   | 127  | 120  | 123  | 128     |
| 1928.....      | 125  | 128  | 135  | 143  | 159 | 151  | 141  | 119  | 116   | 115  | 110  | 112  | 130     |
| 1929.....      | 114  | 122  | 123  | 119  | 112 | 110  | 121  | 128  | 130   | 128  | 117  | 119  | 120     |
| 1930.....      | 118  | 115  | 107  | 110  | 105 | 105  | 91   | 100  | 99    | 91   | 79   | 80   | 100     |
| 1931.....      | 76   | 75   | 73   | 74   | 73  | 67   | 57   | 53   | 50    | 46   | 38   | 53   | 63      |
| 1932.....      | 52   | 52   | 52   | 51   | 49  | 45   | 43   | 44   | 42    | 37   | 35   | 34   | 44      |
| 1933.....      | 35   | 34   | 36   | 47   | 63  | 63   | 94   | 81   | 78    | 69   | 75   | 73   | 62      |
| 1934.....      | 76   | 79   | 79   | 77   | 78  | 89   | 91   | 106  | 112   | 109  | 109  | 116  | 98      |

TABLE 472.—Index numbers of farm prices, United States, 1910-34, as revised in 1934.—Continued

| Group and year                | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Average |
|-------------------------------|------|------|------|------|-----|------|------|------|-------|------|------|------|---------|
| <b>COTTON AND COTTONSEED</b>  |      |      |      |      |     |      |      |      |       |      |      |      |         |
| 1910.....                     | 116  | 113  | 113  | 113  | 114 | 113  | 113  | 115  | 112   | 111  | 113  | 115  | 113     |
| 1911.....                     | 117  | 114  | 112  | 114  | 116 | 116  | 110  | 100  | 88    | 77   | 71   | 70   | 101     |
| 1912.....                     | 71   | 76   | 81   | 85   | 89  | 89   | 83   | 92   | 89    | 88   | 91   | 97   | 87      |
| 1913.....                     | 97   | 96   | 95   | 95   | 94  | 94   | 94   | 93   | 101   | 106  | 102  | 98   | 97      |
| 1914.....                     | 96   | 99   | 99   | 98   | 100 | 101  | 100  | 86   | 66    | 58   | 54   | 57   | 85      |
| 1915.....                     | 60   | 65   | 67   | 73   | 74  | 72   | 70   | 70   | 81    | 98   | 99   | 98   | 77      |
| 1916.....                     | 100  | 99   | 99   | 101  | 103 | 107  | 108  | 115  | 128   | 144  | 162  | 160  | 119     |
| 1917.....                     | 148  | 143  | 145  | 160  | 168 | 189  | 204  | 199  | 196   | 214  | 232  | 237  | 187     |
| 1918.....                     | 244  | 249  | 256  | 251  | 235 | 234  | 234  | 246  | 263   | 252  | 236  | 235  | 245     |
| 1919.....                     | 224  | 207  | 205  | 213  | 231 | 249  | 260  | 258  | 252   | 277  | 295  | 291  | 247     |
| 1920.....                     | 293  | 294  | 298  | 303  | 303 | 301  | 297  | 266  | 218   | 175  | 132  | 101  | 248     |
| 1921.....                     | 93   | 89   | 80   | 76   | 78  | 78   | 79   | 91   | 130   | 150  | 137  | 131  | 101     |
| 1922.....                     | 129  | 128  | 131  | 135  | 144 | 159  | 166  | 166  | 161   | 168  | 186  | 195  | 156     |
| 1923.....                     | 203  | 215  | 224  | 222  | 211 | 208  | 199  | 190  | 204   | 222  | 238  | 253  | 216     |
| 1924.....                     | 256  | 247  | 220  | 226  | 222 | 220  | 216  | 219  | 175   | 182  | 178  | 177  | 212     |
| 1925.....                     | 182  | 184  | 195  | 189  | 184 | 183  | 186  | 186  | 178   | 171  | 144  | 139  | 177     |
| 1926.....                     | 139  | 141  | 133  | 135  | 130 | 131  | 126  | 130  | 134   | 94   | 88   | 81   | 122     |
| 1927.....                     | 85   | 94   | 102  | 101  | 113 | 119  | 125  | 136  | 179   | 169  | 162  | 153  | 128     |
| 1928.....                     | 152  | 141  | 147  | 154  | 166 | 162  | 170  | 153  | 142   | 147  | 146  | 148  | 152     |
| 1929.....                     | 147  | 148  | 154  | 152  | 148 | 146  | 145  | 146  | 146   | 141  | 132  | 130  | 144     |
| 1930.....                     | 128  | 121  | 113  | 120  | 119 | 115  | 99   | 94   | 83    | 76   | 79   | 73   | 102     |
| 1931.....                     | 72   | 76   | 80   | 78   | 74  | 65   | 71   | 53   | 47    | 42   | 50   | 45   | 63      |
| 1932.....                     | 45   | 47   | 50   | 46   | 42  | 37   | 41   | 51   | 57    | 51   | 47   | 43   | 47      |
| 1933.....                     | 45   | 44   | 48   | 49   | 65  | 69   | 84   | 71   | 69    | 71   | 76   | 77   | 64      |
| 1934.....                     | 82   | 93   | 94   | 94   | 90  | 94   | 99   | 107  | 110   | 107  | 107  | 109  | 99      |
| <b>FRUITS</b>                 |      |      |      |      |     |      |      |      |       |      |      |      |         |
| 1910.....                     | 89   | 96   | 100  | 104  | 117 | 117  | 103  | 95   | 101   | 106  | 90   | 90   | 101     |
| 1911.....                     | 95   | 99   | 100  | 117  | 120 | 121  | 108  | 92   | 99    | 103  | 88   | 88   | 102     |
| 1912.....                     | 95   | 100  | 102  | 104  | 114 | 108  | 94   | 84   | 88    | 80   | 76   | 77   | 94      |
| 1913.....                     | 83   | 88   | 98   | 109  | 120 | 133  | 111  | 119  | 115   | 113  | 100  | 92   | 107     |
| 1914.....                     | 99   | 104  | 107  | 113  | 121 | 113  | 96   | 76   | 68    | 70   | 64   | 60   | 91      |
| 1915.....                     | 63   | 64   | 65   | 76   | 86  | 96   | 95   | 93   | 91    | 86   | 89   | 79   | 82      |
| 1916.....                     | 86   | 80   | 86   | 88   | 99  | 112  | 114  | 116  | 111   | 117  | 97   | 93   | 100     |
| 1917.....                     | 97   | 106  | 108  | 115  | 124 | 137  | 130  | 111  | 107   | 120  | 123  | 137  | 113     |
| 1918.....                     | 143  | 160  | 174  | 167  | 190 | 184  | 190  | 195  | 204   | 170  | 140  | 148  | 172     |
| 1919.....                     | 149  | 163  | 185  | 193  | 208 | 201  | 187  | 167  | 171   | 170  | 162  | 182  | 178     |
| 1920.....                     | 191  | 216  | 220  | 237  | 241 | 231  | 197  | 183  | 172   | 155  | 130  | 127  | 191     |
| 1921.....                     | 128  | 123  | 127  | 141  | 153 | 173  | 171  | 159  | 164   | 185  | 178  | 187  | 157     |
| 1922.....                     | 167  | 187  | 204  | 202  | 232 | 224  | 199  | 166  | 150   | 119  | 118  | 122  | 174     |
| 1923.....                     | 132  | 139  | 143  | 150  | 168 | 160  | 164  | 128  | 121   | 119  | 110  | 102  | 137     |
| 1924.....                     | 102  | 107  | 111  | 119  | 118 | 147  | 126  | 140  | 138   | 143  | 129  | 122  | 125     |
| 1925.....                     | 134  | 142  | 161  | 171  | 200 | 227  | 193  | 172  | 181   | 180  | 163  | 140  | 172     |
| 1926.....                     | 143  | 148  | 152  | 162  | 156 | 161  | 146  | 121  | 125   | 131  | 112  | 101  | 138     |
| 1927.....                     | 108  | 111  | 113  | 119  | 120 | 148  | 156  | 166  | 182   | 174  | 164  | 166  | 144     |
| 1928.....                     | 173  | 184  | 190  | 198  | 224 | 205  | 200  | 163  | 173   | 147  | 127  | 125  | 176     |
| 1929.....                     | 126  | 120  | 121  | 123  | 132 | 146  | 151  | 157  | 156   | 158  | 145  | 158  | 141     |
| 1930.....                     | 154  | 157  | 166  | 187  | 214 | 210  | 195  | 169  | 159   | 132  | 110  | 97   | 162     |
| 1931.....                     | 99   | 99   | 104  | 109  | 116 | 118  | 110  | 88   | 94    | 88   | 75   | 74   | 98      |
| 1932.....                     | 73   | 76   | 80   | 86   | 93  | 93   | 90   | 74   | 83    | 83   | 74   | 73   | 82      |
| 1933.....                     | 70   | 64   | 65   | 69   | 74  | 86   | 81   | 74   | 78    | 77   | 70   | 74   | 74      |
| 1934.....                     | 86   | 87   | 97   | 96   | 110 | 137  | 113  | 101  | 93    | 98   | 94   | 85   | 100     |
| <b>COMMERCIAL TRUCK CROPS</b> |      |      |      |      |     |      |      |      |       |      |      |      |         |
| 1924.....                     | 142  | 139  | 172  | 164  | 171 | 137  | 145  | 164  | 168   | 147  | 115  | 145  | 150     |
| 1925.....                     | 156  | 169  | 121  | 124  | 142 | 177  | 172  | 147  | 149   | 155  | 155  | 164  | 153     |
| 1926.....                     | 164  | 190  | 171  | 164  | 159 | 152  | 126  | 118  | 126   | 110  | 124  | 110  | 146     |
| 1927.....                     | 117  | 101  | 117  | 120  | 139 | 155  | 147  | 158  | 112   | 93   | 98   | 102  | 121     |
| 1928.....                     | 131  | 134  | 149  | 158  | 140 | 120  | 126  | 134  | 175   | 226  | 225  | 188  | 159     |
| 1929.....                     | 166  | 143  | 146  | 147  | 126 | 136  | 161  | 155  | 146   | 145  | 159  | 166  | 149     |
| 1930.....                     | 183  | 185  | 172  | 150  | 121 | 115  | 107  | 139  | 146   | 124  | 120  | 114  | 140     |
| 1931.....                     | 117  | 120  | 108  | 118  | 111 | 83   | 98   | 105  | 134   | 143  | 137  | 136  | 117     |
| 1932.....                     | 133  | 143  | 152  | 147  | 111 | 86   | 79   | 64   | 72    | 69   | 80   | 89   | 102     |
| 1933.....                     | 91   | 96   | 92   | 74   | 89  | 111  | 102  | 95   | 147   | 123  | 127  | 114  | 105     |
| 1934.....                     | 102  | 101  | 79   | 98   | 89  | 80   | 102  | 108  | 133   | 110  | 107  | 130  | 104     |
| <b>MEAT ANIMALS</b>           |      |      |      |      |     |      |      |      |       |      |      |      |         |
| 1910.....                     | 99   | 100  | 110  | 116  | 110 | 109  | 104  | 99   | 102   | 101  | 96   | 93   | 103     |
| 1911.....                     | 96   | 93   | 92   | 88   | 84  | 82   | 83   | 88   | 88    | 84   | 83   | 82   | 87      |
| 1912.....                     | 88   | 85   | 87   | 96   | 95  | 96   | 95   | 100  | 102   | 104  | 99   | 99   | 95      |
| 1913.....                     | 96   | 103  | 109  | 113  | 109 | 110  | 111  | 110  | 109   | 110  | 108  | 106  | 108     |
| 1914.....                     | 109  | 112  | 114  | 114  | 113 | 112  | 114  | 117  | 117   | 111  | 106  | 104  | 112     |
| 1915.....                     | 103  | 101  | 101  | 103  | 106 | 107  | 106  | 105  | 106   | 108  | 101  | 98   | 104     |
| 1916.....                     | 101  | 108  | 117  | 122  | 123 | 124  | 123  | 123  | 128   | 122  | 124  | 125  | 120     |
| 1917.....                     | 131  | 144  | 163  | 178  | 180 | 173  | 173  | 179  | 191   | 195  | 187  | 191  | 174     |
| 1918.....                     | 189  | 189  | 195  | 205  | 211 | 208  | 206  | 212  | 215   | 205  | 199  | 200  | 203     |
| 1919.....                     | 202  | 204  | 212  | 225  | 223 | 221  | 229  | 228  | 198   | 181  | 178  | 173  | 207     |
| 1920.....                     | 182  | 185  | 185  | 187  | 183 | 182  | 181  | 177  | 177   | 170  | 151  | 125  | 174     |

TABLE 472.—Index numbers of farm prices, United States, 1910-34, as revised in 1934—Continued

| Group and year                | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Average |
|-------------------------------|------|------|------|------|-----|------|------|------|-------|------|------|------|---------|
| <b>MEAT ANIMALS—continued</b> |      |      |      |      |     |      |      |      |       |      |      |      |         |
| 1921.....                     | 123  | 119  | 125  | 114  | 111 | 105  | 109  | 113  | 101   | 98   | 93   | 92   | 109     |
| 1922.....                     | 96   | 109  | 119  | 118  | 120 | 122  | 121  | 115  | 113   | 114  | 109  | 108  | 114     |
| 1923.....                     | 111  | 111  | 111  | 111  | 109 | 104  | 106  | 105  | 113   | 107  | 101  | 99   | 107     |
| 1924.....                     | 102  | 103  | 105  | 107  | 108 | 106  | 104  | 117  | 116   | 122  | 116  | 114  | 110     |
| 1925.....                     | 124  | 127  | 146  | 147  | 140 | 139  | 149  | 150  | 144   | 142  | 137  | 137  | 140     |
| 1926.....                     | 142  | 147  | 148  | 146  | 149 | 155  | 153  | 144  | 149   | 149  | 143  | 140  | 147     |
| 1927.....                     | 141  | 144  | 144  | 144  | 137 | 130  | 131  | 137  | 142   | 146  | 142  | 139  | 140     |
| 1928.....                     | 138  | 139  | 140  | 142  | 151 | 151  | 157  | 162  | 174   | 160  | 150  | 143  | 151     |
| 1929.....                     | 146  | 154  | 160  | 164  | 164 | 163  | 167  | 164  | 156   | 150  | 144  | 143  | 156     |
| 1930.....                     | 147  | 150  | 150  | 146  | 142 | 141  | 126  | 119  | 128   | 123  | 118  | 112  | 133     |
| 1931.....                     | 111  | 105  | 106  | 105  | 99  | 90   | 92   | 92   | 86    | 78   | 76   | 68   | 92      |
| 1932.....                     | 68   | 65   | 69   | 66   | 59  | 57   | 72   | 69   | 67    | 60   | 57   | 52   | 63      |
| 1933.....                     | 51   | 53   | 56   | 57   | 65  | 66   | 66   | 64   | 62    | 64   | 59   | 52   | 60      |
| 1934.....                     | 55   | 65   | 66   | 64   | 64  | 64   | 66   | 68   | 82    | 74   | 72   | 73   | 68      |
| <b>DAIRY PRODUCTS</b>         |      |      |      |      |     |      |      |      |       |      |      |      |         |
| 1910.....                     | 104  | 101  | 100  | 100  | 95  | 94   | 94   | 95   | 98    | 100  | 102  | 102  | 99      |
| 1911.....                     | 100  | 97   | 94   | 90   | 88  | 88   | 90   | 92   | 95    | 96   | 101  | 104  | 95      |
| 1912.....                     | 109  | 105  | 104  | 103  | 100 | 97   | 96   | 96   | 99    | 103  | 107  | 110  | 102     |
| 1913.....                     | 108  | 108  | 109  | 107  | 102 | 100  | 99   | 99   | 103   | 105  | 109  | 110  | 105     |
| 1914.....                     | 107  | 104  | 102  | 99   | 99  | 97   | 98   | 100  | 103   | 104  | 107  | 108  | 102     |
| 1915.....                     | 109  | 107  | 103  | 108  | 102 | 99   | 98   | 98   | 99    | 102  | 105  | 108  | 103     |
| 1916.....                     | 108  | 106  | 109  | 108  | 105 | 102  | 102  | 106  | 108   | 114  | 121  | 124  | 109     |
| 1917.....                     | 124  | 127  | 125  | 131  | 130 | 127  | 127  | 132  | 139   | 147  | 150  | 156  | 135     |
| 1918.....                     | 161  | 161  | 155  | 152  | 151 | 151  | 151  | 155  | 165   | 177  | 184  | 190  | 163     |
| 1919.....                     | 185  | 176  | 180  | 184  | 178 | 174  | 176  | 181  | 185   | 194  | 205  | 209  | 186     |
| 1920.....                     | 208  | 205  | 203  | 205  | 195 | 191  | 191  | 193  | 197   | 200  | 200  | 187  | 198     |
| 1921.....                     | 181  | 172  | 172  | 184  | 143 | 137  | 140  | 147  | 147   | 154  | 156  | 154  | 156     |
| 1922.....                     | 143  | 142  | 141  | 137  | 134 | 137  | 137  | 136  | 142   | 147  | 154  | 165  | 143     |
| 1923.....                     | 164  | 162  | 160  | 161  | 152 | 149  | 147  | 151  | 159   | 166  | 172  | 171  | 159     |
| 1924.....                     | 171  | 168  | 163  | 149  | 142 | 141  | 139  | 134  | 140   | 142  | 143  | 151  | 149     |
| 1925.....                     | 149  | 148  | 153  | 149  | 148 | 147  | 147  | 151  | 153   | 163  | 164  | 163  | 153     |
| 1926.....                     | 162  | 158  | 154  | 148  | 145 | 144  | 144  | 143  | 149   | 151  | 158  | 162  | 152     |
| 1927.....                     | 162  | 161  | 160  | 159  | 153 | 148  | 146  | 144  | 150   | 156  | 158  | 163  | 155     |
| 1928.....                     | 164  | 161  | 160  | 156  | 154 | 152  | 151  | 153  | 159   | 161  | 162  | 165  | 158     |
| 1929.....                     | 163  | 163  | 163  | 160  | 156 | 153  | 152  | 153  | 155   | 158  | 157  | 155  | 157     |
| 1930.....                     | 146  | 142  | 139  | 141  | 139 | 131  | 129  | 134  | 139   | 140  | 138  | 129  | 137     |
| 1931.....                     | 118  | 113  | 115  | 112  | 102 | 98   | 98   | 102  | 107   | 112  | 110  | 106  | 108     |
| 1932.....                     | 97   | 91   | 89   | 85   | 80  | 74   | 74   | 78   | 80    | 81   | 81   | 84   | 83      |
| 1933.....                     | 81   | 74   | 71   | 72   | 78  | 80   | 88   | 85   | 89    | 91   | 92   | 88   | 82      |
| 1934.....                     | 84   | 92   | 95   | 91   | 91  | 93   | 94   | 97   | 99    | 100  | 105  | 107  | 96      |
| <b>CHICKENS AND EGGS</b>      |      |      |      |      |     |      |      |      |       |      |      |      |         |
| 1910.....                     | 127  | 115  | 99   | 92   | 92  | 91   | 90   | 91   | 99    | 108  | 118  | 126  | 104     |
| 1911.....                     | 114  | 91   | 79   | 76   | 76  | 75   | 77   | 82   | 90    | 99   | 112  | 121  | 91      |
| 1912.....                     | 123  | 115  | 97   | 85   | 84  | 83   | 84   | 89   | 97    | 108  | 120  | 121  | 100     |
| 1913.....                     | 110  | 98   | 88   | 82   | 83  | 86   | 87   | 91   | 102   | 119  | 133  | 138  | 101     |
| 1914.....                     | 128  | 114  | 105  | 87   | 88  | 90   | 91   | 96   | 107   | 109  | 122  | 133  | 106     |
| 1915.....                     | 133  | 107  | 84   | 85   | 85  | 84   | 84   | 88   | 98    | 111  | 127  | 132  | 101     |
| 1916.....                     | 125  | 111  | 92   | 91   | 95  | 98   | 101  | 107  | 120   | 137  | 151  | 162  | 119     |
| 1917.....                     | 162  | 157  | 123  | 138  | 144 | 144  | 140  | 143  | 165   | 174  | 189  | 197  | 155     |
| 1918.....                     | 209  | 203  | 183  | 152  | 153 | 151  | 107  | 175  | 189   | 205  | 227  | 254  | 188     |
| 1919.....                     | 240  | 170  | 171  | 183  | 196 | 185  | 193  | 200  | 206   | 228  | 252  | 288  | 209     |
| 1920.....                     | 261  | 226  | 202  | 192  | 194 | 187  | 196  | 208  | 229   | 243  | 267  | 276  | 223     |
| 1921.....                     | 236  | 158  | 145  | 123  | 118 | 120  | 134  | 149  | 153   | 179  | 213  | 216  | 162     |
| 1922.....                     | 153  | 152  | 113  | 116  | 119 | 118  | 115  | 115  | 137   | 160  | 188  | 201  | 141     |
| 1923.....                     | 189  | 146  | 131  | 120  | 122 | 120  | 122  | 127  | 148   | 163  | 196  | 193  | 146     |
| 1924.....                     | 162  | 157  | 114  | 111  | 116 | 121  | 126  | 136  | 155   | 176  | 199  | 211  | 149     |
| 1925.....                     | 208  | 166  | 129  | 133  | 137 | 140  | 146  | 151  | 154   | 175  | 204  | 209  | 163     |
| 1926.....                     | 178  | 149  | 134  | 139  | 142 | 144  | 144  | 142  | 158   | 174  | 200  | 208  | 159     |
| 1927.....                     | 173  | 149  | 122  | 121  | 119 | 109  | 118  | 126  | 146   | 168  | 187  | 192  | 144     |
| 1928.....                     | 176  | 147  | 127  | 127  | 134 | 133  | 139  | 145  | 160   | 171  | 185  | 196  | 153     |
| 1929.....                     | 163  | 161  | 149  | 135  | 141 | 147  | 149  | 155  | 168   | 181  | 198  | 200  | 162     |
| 1930.....                     | 177  | 156  | 122  | 123  | 116 | 109  | 105  | 111  | 128   | 131  | 146  | 127  | 129     |
| 1931.....                     | 112  | 84   | 96   | 95   | 83  | 86   | 88   | 97   | 102   | 111  | 124  | 120  | 100     |
| 1932.....                     | 90   | 74   | 66   | 65   | 64  | 63   | 69   | 78   | 86    | 102  | 112  | 117  | 82      |
| 1933.....                     | 95   | 60   | 56   | 58   | 65  | 58   | 69   | 69   | 78    | 93   | 102  | 94   | 75      |
| 1934.....                     | 82   | 78   | 74   | 72   | 72  | 72   | 76   | 86   | 104   | 108  | 125  | 119  | 89      |



TABLE 472.—*Index numbers of farm prices, United States, 1910-34, as revised in 1934—Continued*

| Group and year                     | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Average |
|------------------------------------|------|------|------|------|-----|------|------|------|-------|------|------|------|---------|
| <b>MISCELLANEOUS FARM PRODUCTS</b> |      |      |      |      |     |      |      |      |       |      |      |      |         |
| 1910.....                          | 99   | 100  | 97   | 92   | 88  | 86   | 92   | 96   | 96    | 90   | 90   | 91   | 93      |
| 1911.....                          | 90   | 92   | 94   | 97   | 100 | 108  | 126  | 126  | 111   | 100  | 98   | 104  | 104     |
| 1912.....                          | 106  | 113  | 123  | 134  | 133 | 132  | 118  | 106  | 100   | 101  | 98   | 93   | 111     |
| 1913.....                          | 95   | 92   | 89   | 87   | 87  | 87   | 91   | 105  | 108   | 111  | 109  | 104  | 97      |
| 1914.....                          | 101  | 100  | 99   | 99   | 100 | 102  | 105  | 104  | 95    | 89   | 86   | 87   | 97      |
| 1915.....                          | 84   | 87   | 91   | 94   | 95  | 95   | 94   | 90   | 86    | 87   | 92   | 94   | 91      |
| 1916.....                          | 97   | 104  | 111  | 116  | 119 | 122  | 124  | 128  | 132   | 134  | 143  | 149  | 124     |
| 1917.....                          | 153  | 170  | 192  | 216  | 239 | 238  | 212  | 196  | 189   | 193  | 194  | 194  | 106     |
| 1918.....                          | 198  | 197  | 192  | 177  | 168 | 165  | 181  | 213  | 209   | 206  | 211  | 205  | 195     |
| 1919.....                          | 211  | 203  | 181  | 181  | 186 | 191  | 207  | 227  | 236   | 254  | 277  | 250  | 213     |
| 1920.....                          | 247  | 242  | 255  | 293  | 326 | 318  | 280  | 228  | 178   | 162  | 154  | 144  | 227     |
| 1921.....                          | 140  | 127  | 117  | 107  | 102 | 103  | 118  | 137  | 147   | 152  | 137  | 138  | 127     |
| 1922.....                          | 139  | 134  | 133  | 130  | 131 | 133  | 134  | 142  | 134   | 137  | 132  | 138  | 135     |
| 1923.....                          | 153  | 142  | 132  | 131  | 131 | 129  | 136  | 162  | 146   | 137  | 137  | 135  | 140     |
| 1924.....                          | 145  | 143  | 138  | 137  | 133 | 136  | 139  | 151  | 136   | 138  | 143  | 141  | 141     |
| 1925.....                          | 146  | 141  | 134  | 131  | 127 | 131  | 153  | 166  | 148   | 157  | 179  | 181  | 151     |
| 1926.....                          | 176  | 173  | 178  | 205  | 199 | 175  | 171  | 172  | 163   | 155  | 159  | 151  | 172     |
| 1927.....                          | 139  | 134  | 136  | 138  | 149 | 173  | 168  | 161  | 132   | 133  | 138  | 142  | 146     |
| 1928.....                          | 152  | 137  | 138  | 139  | 135 | 128  | 124  | 121  | 116   | 120  | 125  | 142  | 133     |
| 1929.....                          | 162  | 134  | 124  | 118  | 118 | 119  | 128  | 154  | 143   | 147  | 146  | 154  | 140     |
| 1930.....                          | 157  | 143  | 140  | 142  | 143 | 142  | 129  | 119  | 121   | 112  | 107  | 114  | 131     |
| 1931.....                          | 112  | 99   | 99   | 102  | 100 | 91   | 93   | 91   | 80    | 68   | 66   | 71   | 90      |
| 1932.....                          | 69   | 64   | 66   | 65   | 63  | 58   | 61   | 73   | 66    | 62   | 61   | 70   | 67      |
| 1933.....                          | 68   | 54   | 53   | 56   | 64  | 69   | 100  | 116  | 102   | 93   | 101  | 104  | 83      |
| 1934.....                          | 94   | 98   | 98   | 96   | 92  | 90   | 94   | 125  | 129   | 137  | 123  | 113  | 108     |
| <b>ALL GROUPS</b>                  |      |      |      |      |     |      |      |      |       |      |      |      |         |
| 1910.....                          | 106  | 105  | 105  | 106  | 103 | 102  | 101  | 100  | 102   | 101  | 99   | 99   | 102     |
| 1911.....                          | 99   | 96   | 95   | 95   | 95  | 96   | 98   | 98   | 95    | 93   | 92   | 94   | 95      |
| 1912.....                          | 96   | 98   | 100  | 104  | 107 | 104  | 101  | 99   | 98    | 98   | 97   | 97   | 100     |
| 1913.....                          | 97   | 97   | 98   | 99   | 93  | 100  | 99   | 102  | 105   | 108  | 107  | 105  | 101     |
| 1914.....                          | 105  | 105  | 104  | 102  | 103 | 103  | 103  | 102  | 99    | 95   | 94   | 95   | 101     |
| 1915.....                          | 97   | 98   | 96   | 99   | 101 | 99   | 97   | 95   | 96    | 100  | 101  | 101  | 98      |
| 1916.....                          | 104  | 105  | 107  | 110  | 111 | 113  | 114  | 119  | 125   | 131  | 138  | 140  | 118     |
| 1917.....                          | 141  | 148  | 156  | 173  | 185 | 186  | 183  | 181  | 183   | 188  | 189  | 194  | 175     |
| 1918.....                          | 198  | 200  | 199  | 197  | 196 | 193  | 197  | 207  | 213   | 209  | 205  | 208  | 202     |
| 1919.....                          | 206  | 197  | 197  | 206  | 213 | 213  | 220  | 223  | 215   | 219  | 227  | 227  | 213     |
| 1920.....                          | 229  | 228  | 229  | 239  | 244 | 242  | 231  | 213  | 197   | 183  | 165  | 148  | 211     |
| 1921.....                          | 142  | 130  | 127  | 118  | 113 | 113  | 116  | 123  | 128   | 134  | 130  | 130  | 125     |
| 1922.....                          | 123  | 128  | 130  | 130  | 134 | 136  | 134  | 131  | 129   | 133  | 137  | 143  | 132     |
| 1923.....                          | 146  | 144  | 143  | 143  | 141 | 137  | 136  | 137  | 142   | 144  | 147  | 148  | 142     |
| 1924.....                          | 148  | 147  | 140  | 139  | 137 | 138  | 139  | 147  | 141   | 147  | 145  | 148  | 143     |
| 1925.....                          | 155  | 154  | 156  | 152  | 152 | 156  | 158  | 160  | 155   | 156  | 156  | 155  | 156     |
| 1926.....                          | 153  | 152  | 149  | 151  | 150 | 148  | 144  | 141  | 143   | 138  | 138  | 135  | 145     |
| 1927.....                          | 133  | 132  | 131  | 131  | 134 | 138  | 139  | 142  | 148   | 148  | 147  | 147  | 139     |
| 1928.....                          | 149  | 144  | 145  | 148  | 155 | 150  | 152  | 145  | 149   | 148  | 146  | 147  | 149     |
| 1929.....                          | 147  | 145  | 146  | 144  | 142 | 142  | 147  | 152  | 150   | 149  | 145  | 147  | 146     |
| 1930.....                          | 145  | 140  | 135  | 136  | 134 | 131  | 120  | 118  | 120   | 113  | 110  | 104  | 126     |
| 1931.....                          | 101  | 95   | 97   | 97   | 92  | 86   | 86   | 82   | 80    | 77   | 79   | 75   | 87      |
| 1932.....                          | 71   | 68   | 69   | 67   | 63  | 58   | 63   | 65   | 66    | 64   | 62   | 63   | 65      |
| 1933.....                          | 60   | 55   | 55   | 58   | 68  | 71   | 83   | 79   | 80    | 78   | 80   | 78   | 70      |
| 1934.....                          | 77   | 83   | 84   | 82   | 82  | 86   | 87   | 96   | 103   | 102  | 101  | 101  | 90      |

Bureau of Agricultural Economics; prices of farm products received by producers collected monthly from a list of about 12,000 special price reporters.

This list is made up almost entirely of country-town dealers, elevator managers, buyers, and merchants. The commodities by groups are as follows: Grains—wheat, corn, oats, barley, rye, rice. Cotton and cottonseed. Fruits—apples, oranges, lemons (California), grapefruit (Florida), pears. Meat animals—cattle, calves, sheep, lambs, hogs. Dairy products—milk (wholesale), milk (retail), butter, butterfat. Chickens and eggs. Miscellaneous—potatoes, sweetpotatoes, tobacco, peanuts, wool, flaxseed, beans (dry edible), hay, horses, and mules. Commercial truck crops—tomatoes, lettuce, cantaloups, onions, cabbage, celery, beans (snap), watermelons, asparagus, peas (green), cucumbers, spinach, carrots. These index numbers of commercial truck crops, as constructed, are adjusted for seasonal variation in that the index number for any month is a percentage of the 3 corresponding months in the base period and were not constructed in unadjusted form, nor in the adjusted form prior to January 1924.

TABLE 473.—*Index numbers of wholesale prices, by groups of commodities, United States, 1910-34*<sup>1</sup>

[Calendar years 1910-14=100]

| Year      | Farm products | Foods | Hides and leather products | Textile products | Fuel and lighting | Metals and metal products | Building materials | Chemicals and drugs | House furnishing goods | Miscellaneous | All commodities |
|-----------|---------------|-------|----------------------------|------------------|-------------------|---------------------------|--------------------|---------------------|------------------------|---------------|-----------------|
| 1910..... | 104           | 101   | 98                         | 104              | 90                | 100                       | 100                | 101                 | 99                     | 139           | 103             |
| 1911..... | 94            | 96    | 91                         | 99               | 89                | 95                        | 100                | 100                 | 96                     | 99            | 95              |
| 1912..... | 102           | 104   | 100                        | 99               | 98                | 105                       | 101                | 99                  | 97                     | 97            | 101             |
| 1913..... | 100           | 100   | 106                        | 102              | 116               | 106                       | 103                | 99                  | 103                    | 85            | 102             |
| 1914..... | 100           | 100   | 110                        | 97               | 107               | 94                        | 96                 | 100                 | 104                    | 82            | 99              |
| 1915..... | 100           | 101   | 117                        | 96               | 98                | 101                       | 97                 | 138                 | 103                    | 79            | 102             |
| 1916..... | 118           | 117   | 145                        | 125              | 141               | 137                       | 122                | 198                 | 112                    | 91            | 125             |
| 1917..... | 181           | 162   | 192                        | 175              | 200               | 177                       | 160                | 203                 | 136                    | 111           | 172             |
| 1918..... | 208           | 185   | 195                        | 244              | 207               | 160                       | 179                | 224                 | 171                    | 122           | 192             |
| 1919..... | 221           | 201   | 270                        | 240              | 198               | 154                       | 209                | 193                 | 194                    | 126           | 202             |
| 1920..... | 211           | 213   | 266                        | 293              | 311               | 175                       | 272                | 203                 | 260                    | 152           | 225             |
| 1921..... | 124           | 140   | 169                        | 168              | 134               | 138                       | 176                | 142                 | 207                    | 99            | 142             |
| 1922..... | 132           | 136   | 162                        | 178              | 204               | 121                       | 176                | 124                 | 190                    | 84            | 141             |
| 1923..... | 138           | 144   | 162                        | 198              | 185               | 128                       | 197                | 124                 | 200                    | 91            | 147             |
| 1924..... | 140           | 141   | 157                        | 190              | 175               | 125                       | 185                | 122                 | 192                    | 85            | 143             |
| 1925..... | 154           | 155   | 163                        | 192              | 183               | 121                       | 184                | 125                 | 189                    | 99            | 151             |
| 1926..... | 140           | 155   | 155                        | 178              | 190               | 117                       | 181                | 123                 | 183                    | 91            | 146             |
| 1927..... | 139           | 150   | 167                        | 170              | 168               | 113                       | 172                | 119                 | 179                    | 83            | 139             |
| 1928..... | 148           | 157   | 188                        | 170              | 160               | 114                       | 170                | 118                 | 174                    | 78            | 141             |
| 1929..... | 147           | 155   | 169                        | 161              | 158               | 113                       | 173                | 116                 | 173                    | 75            | 139             |
| 1930..... | 124           | 140   | 155                        | 143              | 149               | 108                       | 163                | 110                 | 170                    | 71            | 126             |
| 1931..... | 91            | 116   | 134                        | 118              | 128               | 99                        | 144                | 98                  | 156                    | 63            | 107             |
| 1932..... | 68            | 95    | 113                        | 98               | 133               | 94                        | 129                | 90                  | 138                    | 58            | 95              |
| 1933..... | 72            | 94    | 125                        | 115              | 125               | 94                        | 140                | 89                  | 139                    | 57            | 96              |
| 1934..... | 92            | 109   | 134                        | 130              | 139               | 102                       | 156                | 94                  | 149                    | 63            | 109             |

<sup>1</sup> Computed by reducing to a 1910-14 base the Bureau of Labor Statistics series, 1926=100; the index numbers for each group on the 1926 base are divided by the monthly averages for 1910-14. The averages used for each group are as follows: Farm products, 71.3; foods, 64.5; hides and leather products, 64.5; textile products, 56.3; fuel and lighting, 52.7; metals and metal products, 85.3; building materials, 55.2; chemicals and drugs, 81.2; house furnishing goods, 54.6; miscellaneous, 110.1; and all commodities, 68.5.

Bureau of Agricultural Economics.

TABLE 474.—*Farm-wage rates: Averages and index numbers, 1909-34*

| Year | Average yearly farm wage <sup>1</sup> |               |            |               | Weighted average wage rate per month <sup>2</sup> | Index numbers of farm wages <sup>3</sup> |      | Year       | Average yearly farm wage <sup>1</sup> |               |            |               | Weighted average wage rate per month <sup>2</sup> | Index numbers of farm wages <sup>3</sup> |
|------|---------------------------------------|---------------|------------|---------------|---|--|------|------------|---------------------------------------|---------------|------------|---------------|---|--|
|      | Per month—                            |               | Per day—   |               |   |  |      |            | Per month—                            |               | Per day—   |               |   |  |
|      | With board                            | Without board | With board | Without board |   |  |      |            | With board                            | Without board | With board | Without board |   |  |
| 1909 | Dol. 20.48                            | Dol. 28.09    | Dol. 1.04  | Dol. 1.31     | Dol. 23.00  | 96                                       | 1922 | Dol. 29.31 | Dol. 42.09                            | Dol. 1.64     | Dol. 2.14  | Dol. 34.91    | 146   |  |
| 1910 | 19.53                                 | 28.04         | 1.07       | 1.40          | 23.03   | 97                                       | 1923 | 33.09      | 46.74                                 | 1.91          | 2.45       | 39.64         | 166   |  |
| 1911 | 19.85                                 | 28.33         | 1.07       | 1.40          | 23.25   | 97                                       | 1924 | 33.34      | 47.22                                 | 1.88          | 2.44       | 39.67         | 166   |  |
| 1912 | 20.46                                 | 29.14         | 1.12       | 1.44          | 24.01   | 101                                      | 1925 | 33.88      | 47.80                                 | 1.89          | 2.46       | 40.12         | 168   |  |
| 1913 | 21.27                                 | 30.21         | 1.15       | 1.48          | 24.83   | 104                                      | 1926 | 34.86      | 48.86                                 | 1.91          | 2.48       | 40.88         | 171   |  |
| 1914 | 20.80                                 | 29.72         | 1.11       | 1.44          | 24.28   | 101                                      | 1927 | 34.58      | 48.63                                 | 1.90          | 2.46       | 40.60         | 170   |  |
| 1915 | 21.08                                 | 29.97         | 1.12       | 1.45          | 24.46   | 102                                      | 1928 | 34.66      | 48.65                                 | 1.88          | 2.43       | 40.44         | 169   |  |
| 1916 | 23.04                                 | 32.58         | 1.24       | 1.60          | 26.83   | 112                                      | 1929 | 34.74      | 49.08                                 | 1.88          | 2.42       | 40.52         | 170   |  |
| 1917 | 25.64                                 | 40.19         | 1.56       | 2.00          | 33.42   | 140                                      | 1930 | 31.14      | 44.59                                 | 1.65          | 2.16       | 36.24         | 152   |  |
| 1918 | 35.12                                 | 49.13         | 2.05       | 2.61          | 42.12   | 176                                      | 1931 | 23.60      | 35.03                                 | 1.23          | 1.65       | 27.61         | 116   |  |
| 1919 | 40.14                                 | 56.77         | 2.44       | 3.10          | 49.11   | 206                                      | 1932 | 17.53      | 26.67                                 | .88           | 1.21       | 20.46         | 86  |  |
| 1920 | 47.24                                 | 65.05         | 2.84       | 3.56          | 57.01   | 239                                      | 1933 | 15.86      | 24.51                                 | .86           | 1.18       | 19.17         | 80  |  |
| 1921 | 30.25                                 | 43.58         | 1.66       | 2.17          | 35.77   | 150                                      | 1934 | 17.89      | 27.17                                 | .98           | 1.31       | 21.50         | 90  |  |

<sup>1</sup> Yearly averages are from reports by crop reporters, giving average wages for the year in their localities.

<sup>2</sup> This column has significance only as an essential step in computing the wage index.

<sup>3</sup> Calendar years 1910-14=100.

<sup>4</sup> Weighted average of quarterly reports, April (weight 1), July (weight 5), October (weight 5), and January of the following year (weight 1).

Bureau of Agricultural Economics. Data for earlier years in 1928 Yearbook, table 531.

TABLE 475.—*Wages for male farm labor, by geographic divisions, quarterly, 1934*

| Division                | Per month, with board |             |             |             | Per month, without board |             |             |             | Per day, with board <sup>1</sup> |             |             |             | Per day, without board <sup>1</sup> |             |             |             |
|-------------------------|-----------------------|-------------|-------------|-------------|--------------------------|-------------|-------------|-------------|----------------------------------|-------------|-------------|-------------|-------------------------------------|-------------|-------------|-------------|
|                         | Jan.                  | Apr.        | July        | Oct.        | Jan.                     | Apr.        | July        | Oct.        | Jan.                             | Apr.        | July        | Oct.        | Jan.                                | Apr.        | July        | Oct.        |
| New England.....        | <i>Dol.</i>           | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i>              | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i>                      | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i>                         | <i>Dol.</i> | <i>Dol.</i> | <i>Dol.</i> |
| Middle Atlantic.....    | 24.40                 | 25.74       | 27.52       | 27.07       | 43.96                    | 46.56       | 48.12       | 47.68       | 1.43                             | 1.47        | 1.62        | 1.61        | 2.09                                | 2.16        | 2.27        | 2.29        |
| East North Central..... | 19.80                 | 22.39       | 23.17       | 23.17       | 34.21                    | 36.80       | 37.49       | 37.64       | 1.24                             | 1.31        | 1.39        | 1.46        | 1.76                                | 1.82        | 1.95        | 1.98        |
| West North Central..... | 15.69                 | 18.95       | 19.24       | 19.74       | 25.06                    | 28.29       | 28.48       | 28.83       | .94                              | 1.04        | 1.08        | 1.13        | 1.30                                | 1.39        | 1.43        | 1.49        |
| South Atlantic.....     | 14.13                 | 18.88       | 19.26       | 19.17       | 23.08                    | 27.92       | 27.69       | 27.56       | .88                              | .97         | 1.03        | 1.04        | 1.23                                | 1.37        | 1.41        | 1.44        |
| East South Central..... | 13.38                 | 13.38       | 13.71       | 14.45       | 20.02                    | 20.18       | 20.41       | 21.20       | .71                              | .72         | .76         | .77         | .93                                 | .96         | .97         | 1.02        |
| West South Central..... | 12.27                 | 12.60       | 13.09       | 13.21       | 17.88                    | 18.12       | 18.46       | 19.40       | .62                              | .66         | .65         | .69         | .84                                 | .86         | .86         | .89         |
| Mountain.....           | 14.87                 | 15.59       | 15.67       | 16.20       | 22.30                    | 22.90       | 22.98       | 23.45       | .78                              | .80         | .82         | .82         | 1.03                                | 1.02        | 1.01        | 1.06        |
| Pacific.....            | 23.03                 | 26.45       | 28.08       | 28.95       | 34.54                    | 39.54       | 41.02       | 41.26       | 1.13                             | 1.23        | 1.31        | 1.35        | 1.56                                | 1.71        | 1.78        | 1.85        |
| United States.....      | 25.37                 | 30.29       | 31.46       | 33.62       | 45.68                    | 48.42       | 51.39       | 53.68       | 1.30                             | 1.40        | 1.56        | 1.57        | 2.00                                | 2.11        | 2.23        | 2.30        |
| United States.....      | 15.73                 | 17.70       | 18.18       | 18.63       | 24.90                    | 26.88       | 27.29       | 27.83       | .87                              | .93         | .97         | 1.00        | 1.21                                | 1.27        | 1.30        | 1.34        |

<sup>1</sup> Includes piecework.

Bureau of Agricultural Economics; as reported by field and crop reporters.

TABLE 476.—*Farm real estate: Index numbers of estimated value per acre, by geographic divisions, 1912-35<sup>1</sup>*

[1912-14=100]

| Year      | New England | Middle Atlantic | East North Central | West North Central | South Atlantic | East South Central | West South Central | Mountain | Pacific | United States |
|-----------|-------------|-----------------|--------------------|--------------------|----------------|--------------------|--------------------|----------|---------|---------------|
| 1912..... | 99          | 98              | 97                 | 97                 | 98             | 97                 | 96                 | 98       | 94      | 97            |
| 1913..... | 101         | 100             | 100                | 100                | 100            | 100                | 100                | 102      | 99      | 100           |
| 1914..... | 100         | 102             | 103                | 103                | 103            | 103                | 104                | 100      | 106     | 103           |
| 1915..... | 99          | 100             | 104                | 105                | 98             | 99                 | 100                | 98       | 107     | 103           |
| 1916..... | 102         | 104             | 110                | 114                | 108            | 109                | 103                | 98       | 111     | 108           |
| 1917..... | 112         | 112             | 116                | 122                | 119            | 120                | 116                | 106      | 122     | 117           |
| 1918..... | 117         | 117             | 127                | 134                | 125            | 140                | 134                | 117      | 129     | 129           |
| 1919..... | 123         | 121             | 135                | 147                | 161            | 162                | 143                | 130      | 134     | 140           |
| 1920..... | 140         | 136             | 161                | 184                | 198            | 199                | 177                | 151      | 156     | 170           |
| 1921..... | 135         | 127             | 151                | 174                | 174            | 163                | 159                | 133      | 155     | 157           |
| 1922..... | 134         | 118             | 132                | 150                | 146            | 149                | 136                | 122      | 151     | 139           |
| 1923..... | 130         | 116             | 128                | 142                | 152            | 149                | 132                | 115      | 148     | 135           |
| 1924..... | 128         | 114             | 121                | 132                | 151            | 142                | 136                | 110      | 147     | 130           |
| 1925..... | 127         | 114             | 116                | 126                | 148            | 141                | 144                | 105      | 146     | 127           |
| 1926..... | 128         | 113             | 111                | 121                | 149            | 139                | 144                | 103      | 144     | 124           |
| 1927..... | 127         | 111             | 104                | 115                | 137            | 133                | 139                | 101      | 143     | 119           |
| 1928..... | 127         | 110             | 101                | 113                | 134            | 130                | 137                | 101      | 142     | 117           |
| 1929..... | 126         | 109             | 100                | 112                | 132            | 129                | 136                | 101      | 142     | 116           |
| 1930..... | 127         | 106             | 96                 | 109                | 128            | 128                | 136                | 102      | 142     | 115           |
| 1931..... | 126         | 101             | 87                 | 97                 | 116            | 117                | 121                | 100      | 140     | 106           |
| 1932..... | 116         | 96              | 78                 | 81                 | 96             | 97                 | 97                 | 82       | 118     | 89            |
| 1933..... | 105         | 82              | 62                 | 64                 | 80             | 79                 | 82                 | 66       | 96      | 73            |
| 1934..... | 104         | 82              | 65                 | 67                 | 87             | 85                 | 88                 | 69       | 97      | 76            |
| 1935..... | 104         | 83              | 68                 | 68                 | 92             | 93                 | 91                 | 70       | 101     | 79            |

<sup>1</sup> All farm land with improvements, as of Mar. 1. Owing to rounding of figures, 1912-14 will not always equal exactly 100 percent.<sup>2</sup> Revised.

Bureau of Agricultural Economics; based on values as reported by crop reporters.

Values as reported by the census for 1910, 1920, and 1925 will be found in 1927 Yearbook, table 511.

For details by States since 1912, refer to Stauber, E. R. The Farm Real Estate Situation, 1932-33, U. S. Department of Agriculture, Circular 309, 63 pp. illus. 1933.

TABLE 477.—*Number of farms changing ownership by various methods, per 1,000 of all farms, by geographic divisions, 12 months ended Mar. 15, 1930-34*

| Method of sale and year                                  | New England         | Middle Atlantic     | East North Central  | West North Central  | South Atlantic      | East South Central  | West South Central  | Mountain            | Pacific             | United States       |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|  | Number per thousand | Number per thousand | Number per thousand | Number per thousand | Number per thousand | Number per thousand | Number per thousand | Number per thousand | Number per thousand | Number per thousand |
| <b>Voluntary sales and trades:<sup>1</sup></b>           |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| 1930.....  | 30.7                | 28.3                | 20.8                | 22.9                | 18.2                | 23.9                | 24.2                | 38.7                | 30.1                | 23.7                |
| 1931.....  | 30.7                | 24.5                | 18.6                | 18.9                | 14.5                | 19.4                | 16.7                | 24.8                | 22.1                | 19.0                |
| 1932.....  | 24.8                | 20.4                | 16.8                | 14.2                | 12.3                | 17.2                | 15.4                | 17.6                | 22.3                | 16.2                |
| 1933.....  | 22.5                | 21.0                | 15.6                | 13.8                | 15.3                | 18.9                | 17.6                | 16.8                | 21.3                | 16.8                |
| 1934.....  | 19.9                | 20.1                | 16.5                | 15.5                | 17.6                | 19.1                | 18.8                | 17.5                | 20.9                | 17.8                |
| <b>Forced sales and related defaults:</b>                |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| 1930.....  | 11.2                | 13.1                | 22.3                | 27.5                | 23.2                | 16.1                | 16.8                | 29.4                | 15.2                | 20.8                |
| 1931.....  | 9.7                 | 18.8                | 24.0                | 31.3                | 32.2                | 25.9                | 22.4                | 36.4                | 25.0                | 26.1                |
| 1932.....  | 15.5                | 18.0                | 34.3                | 52.5                | 47.1                | 50.6                | 40.2                | 43.5                | 37.6                | 41.7                |
| 1933.....  | 19.8                | 28.3                | 43.9                | 72.0                | 59.5                | 63.5                | 51.2                | 52.8                | 44.1                | 54.1                |
| 1934.....  | 20.1                | 26.2                | 32.0                | 50.9                | 40.7                | 44.9                | 34.3                | 44.1                | 37.1                | 39.1                |
| <b>Inheritance and gift:</b>                             |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| 1930.....  | 10.3                | 8.2                 | 9.4                 | 9.8                 | 11.4                | 9.3                 | 7.6                 | 7.0                 | 7.3                 | 9.3                 |
| 1931.....  | 8.8                 | 8.5                 | 9.3                 | 9.7                 | 12.5                | 9.9                 | 7.4                 | 6.9                 | 6.6                 | 9.4                 |
| 1932.....  | 10.2                | 9.0                 | 11.0                | 9.8                 | 13.3                | 11.1                | 8.8                 | 7.8                 | 7.5                 | 10.4                |
| 1933.....  | 11.9                | 11.2                | 13.3                | 12.9                | 16.7                | 13.7                | 11.8                | 9.5                 | 11.2                | 13.1                |
| 1934.....  | 10.9                | 11.7                | 13.1                | 11.8                | 16.1                | 12.7                | 11.2                | 9.9                 | 10.3                | 12.6                |
| <b>Administrators' and executors' sales:<sup>2</sup></b> |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| 1930.....  | 6.1                 | 7.0                 | 7.8                 | 6.2                 | 7.9                 | 5.8                 | 3.3                 | 4.7                 | 3.6                 | 6.1                 |
| 1931.....  | 5.6                 | 7.0                 | 7.5                 | 5.4                 | 6.5                 | 5.6                 | 3.4                 | 3.6                 | 3.6                 | 5.7                 |
| 1932.....  | 6.9                 | 6.1                 | 8.1                 | 4.9                 | 8.1                 | 6.2                 | 4.9                 | 4.5                 | 4.3                 | 6.2                 |
| 1933.....  | 7.1                 | 7.9                 | 7.6                 | 6.1                 | 10.2                | 7.5                 | 4.8                 | 4.1                 | 3.9                 | 7.0                 |
| 1934.....  | 5.5                 | 8.4                 | 7.7                 | 5.7                 | 9.9                 | 6.5                 | 4.9                 | 4.5                 | 3.8                 | 6.7                 |
| <b>Total, all classes:<sup>3</sup></b>                   |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| 1930.....  | 60.2                | 58.0                | 61.6                | 68.0                | 62.7                | 56.5                | 53.3                | 81.7                | 57.6                | 61.5                |
| 1931.....  | 56.1                | 55.5                | 60.9                | 66.8                | 68.3                | 62.6                | 51.6                | 72.3                | 58.1                | 61.9                |
| 1932.....  | 60.5                | 55.3                | 72.4                | 83.8                | 83.4                | 87.2                | 71.3                | 75.5                | 73.7                | 76.6                |
| 1933.....  | 63.5                | 69.9                | 82.7                | 107.1               | 104.9               | 106.6               | 88.3                | 85.4                | 82.7                | 93.6                |
| 1934.....  | 58.4                | 68.3                | 71.4                | 85.9                | 87.3                | 85.9                | 71.6                | 78.1                | 74.3                | 78.6                |

<sup>1</sup> Including contracts to purchase (but not options).<sup>2</sup> Includes all other sales in settlement of estates.<sup>3</sup> Including miscellaneous and unclassified.

Bureau of Agricultural Economics; based on returns from crop reporters.

TABLE 478.—Farm real estate taxes per acre, by States and geographic divisions, 1913-33

| State and geographic division | 1913         | 1914         | 1915         | 1916         | 1917         | 1918         | 1919         | 1920         | 1921         | 1922         | 1923         | 1924         | 1925         | 1926         | 1927         | 1928         | 1929         | 1930         | 1931         | 1932         | 1933         |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Maine.....                    | Dol.<br>0.32 | Dol.<br>0.32 | Dol.<br>0.33 | Dol.<br>0.34 | Dol.<br>0.39 | Dol.<br>0.40 | Dol.<br>0.45 | Dol.<br>0.55 | Dol.<br>0.55 | Dol.<br>0.58 | Dol.<br>0.63 | Dol.<br>0.62 | Dol.<br>0.62 | Dol.<br>0.60 | Dol.<br>0.70 | Dol.<br>0.73 | Dol.<br>0.76 | Dol.<br>0.81 | Dol.<br>0.82 | Dol.<br>0.78 | Dol.<br>0.70 |
| New Hampshire.....            | 33           | 35           | 35           | 36           | 39           | 41           | 51           | 57           | 60           | 64           | 64           | 69           | 69           | 72           | 76           | 81           | 81           | 76           | 81           | 79           | (1)          |
| Vermont.....                  | 22           | 23           | 25           | 27           | 30           | 33           | 37           | 45           | 45           | 47           | 48           | 50           | 51           | 52           | 54           | 56           | 56           | 57           | 56           | 51           | (1)          |
| Massachusetts.....            | 88           | 95           | 98           | 1.02         | 1.10         | 1.23         | 1.37         | 1.51         | 1.66         | 1.78         | 1.87         | 1.87         | 2.00         | 2.14         | 2.20         | 2.16         | 2.12         | 2.12         | 2.16         | 2.10         | (1)          |
| Rhode Island.....             | 48           | 49           | 54           | 55           | 59           | 64           | 70           | 81           | 88           | 92           | 91           | 99           | 1.03         | 1.10         | 1.23         | 1.26         | 1.32         | 1.36         | 1.30         | 1.30         | (1)          |
| Connecticut.....              | 53           | 57           | 61           | 64           | 71           | 76           | 95           | 1.08         | 1.12         | 1.20         | 1.23         | 1.28         | 1.36         | 1.42         | 1.47         | 1.46         | 1.59         | 1.61         | 1.64         | 1.58         | (1)          |
| New England.....              | 41           | 43           | 44           | 46           | 51           | 53           | 62           | 74           | 77           | 81           | 85           | 86           | 90           | 96           | 98           | 99           | 1.01         | 1.02         | 1.03         | 98           | ---          |
| New York.....                 | 45           | 48           | 53           | 54           | 63           | 64           | 72           | 87           | 88           | 90           | 98           | 1.02         | 1.04         | 1.00         | 1.07         | 1.07         | 1.01         | 1.04         | 1.04         | 98           | ---          |
| New Jersey.....               | 75           | 77           | 81           | 86           | 97           | 1.04         | 1.14         | 1.51         | 1.81         | 1.94         | 1.99         | 2.19         | 2.35         | 2.44         | 2.59         | 2.69         | 2.69         | 2.69         | 2.69         | 2.30         | (1)          |
| Pennsylvania.....             | 50           | 50           | 51           | 55           | 57           | 63           | 68           | 82           | 90           | 97           | 1.01         | 1.05         | 1.11         | 1.16         | 1.18         | 1.24         | 1.28         | 1.30         | 1.57         | 1.22         | 1.09         |
| Middle Atlantic.....          | 49           | 50           | 54           | 56           | 62           | 66           | 73           | 89           | 94           | 99           | 1.05         | 1.09         | 1.13         | 1.17         | 1.19         | 1.22         | 1.21         | 1.24         | 1.23         | 1.15         | ---          |
| Ohio.....                     | 53           | 51           | 60           | 67           | 69           | 73           | 84           | 1.07         | 1.15         | 1.23         | 1.23         | 1.28         | 1.31         | 1.35         | 1.44         | 1.42         | 1.41         | 1.36         | 1.15         | 1.02         | 91           |
| Indiana.....                  | 50           | 50           | 60           | 67           | 73           | 76           | 79           | 1.26         | 1.41         | 1.41         | 1.45         | 1.45         | 1.40         | 1.38         | 1.36         | 1.38         | 1.39         | 1.41         | 1.32         | 91           | 55           |
| Illinois.....                 | 49           | 46           | 52           | 61           | 68           | 65           | 81           | 99           | 1.05         | 1.06         | 1.02         | 1.08         | 1.15         | 1.13         | 1.12         | 1.11         | 1.14         | 1.16         | 1.03         | 92           | 72           |
| Michigan.....                 | 54           | 56           | 63           | 65           | 74           | 80           | 1.07         | 1.23         | 1.32         | 1.31         | 1.29         | 1.24         | 1.26         | 1.27         | 1.35         | 1.35         | 1.38         | 1.34         | 1.18         | 85           | (1)          |
| Wisconsin.....                | 47           | 45           | 49           | 53           | 58           | 62           | 89           | 1.04         | 1.08         | 1.05         | 1.07         | 1.03         | 96           | 98           | 1.07         | 1.09         | 1.13         | 1.07         | 89           | 76           | (1)          |
| East North Central.....       | 52           | 51           | 57           | 64           | 69           | 71           | 89           | 1.10         | 1.18         | 1.19         | 1.19         | 1.21         | 1.21         | 1.21         | 1.25         | 1.25         | 1.27         | 1.25         | 1.10         | 90           | ---          |
| Minnesota.....                | 30           | 34           | 35           | 39           | 46           | 48           | 64           | 76           | 79           | 77           | 84           | 75           | 78           | 80           | 81           | 85           | 86           | 87           | 84           | 67           | ---          |
| Iowa.....                     | 56           | 56           | 60           | 64           | 74           | 76           | 94           | 1.10         | 1.20         | 1.26         | 1.25         | 1.23         | 1.15         | 1.14         | 1.14         | 1.15         | 1.22         | 1.24         | 1.13         | 1.02         | 90           |
| Missouri.....                 | 14           | 15           | 16           | 16           | 18           | 19           | 25           | 28           | 38           | 40           | 40           | 41           | 43           | 44           | 45           | 47           | 47           | 45           | 41           | 37           | 32           |
| North Dakota.....             | 15           | 17           | 20           | 21           | 21           | 25           | 43           | 44           | 45           | 43           | 38           | 38           | 37           | 37           | 39           | 39           | 38           | 38           | 33           | 29           | 27           |
| South Dakota.....             | 15           | 15           | 17           | 18           | 22           | 26           | 35           | 45           | 41           | 41           | 43           | 44           | 44           | 44           | 44           | 45           | 46           | 44           | 35           | 32           | 30           |
| Nebraska.....                 | 19           | 19           | 20           | 20           | 22           | 23           | 28           | 42           | 47           | 47           | 40           | 39           | 42           | 42           | 44           | 46           | 46           | 45           | 42           | 36           | 30           |
| Kansas.....                   | 21           | 22           | 23           | 24           | 27           | 28           | 35           | 42           | 50           | 45           | 48           | 48           | 52           | 54           | 56           | 57           | 58           | 55           | 53           | 41           | 36           |
| West North Central.....       | 24           | 25           | 27           | 28           | 32           | 34           | 46           | 64           | 59           | 57           | 58           | 57           | 58           | 58           | 59           | 60           | 61           | 61           | 56           | 47           | 42           |
| Delaware.....                 | 27           | 29           | 32           | 34           | 43           | 47           | 61           | 68           | 59           | 62           | 63           | 66           | 73           | 79           | 64           | 64           | 54           | 52           | 52           | 49           | 40           |
| Maryland.....                 | 38           | 41           | 42           | 47           | 58           | 60           | 72           | 71           | 76           | 81           | 86           | 89           | 89           | 90           | 90           | 92           | 93           | 93           | 90           | 85           | 66           |
| Virginia.....                 | 12           | 13           | 13           | 16           | 17           | 18           | 20           | 23           | 29           | 30           | 31           | 33           | 34           | 34           | 35           | 34           | 34           | 34           | 31           | 27           | (1)          |
| West Virginia.....            | 13           | 14           | 17           | 18           | 20           | 20           | 28           | 31           | 33           | 38           | 43           | 42           | 43           | 44           | 45           | 45           | 49           | 45           | 44           | 45           | 24           |
| North Carolina.....           | 10           | 10           | 12           | 12           | 14           | 15           | 20           | 24           | 30           | 34           | 41           | 40           | 48           | 50           | 55           | 63           | 64           | 60           | 69           | 61           | 84           |
| South Carolina.....           | 14           | 15           | 15           | 15           | 17           | 24           | 28           | 35           | 36           | 33           | 32           | 38           | 39           | 39           | 40           | 41           | 43           | 40           | 40           | 37           | 52           |
| Georgia.....                  | 13           | 15           | 16           | 16           | 17           | 20           | 23           | 28           | 28           | 28           | 27           | 28           | 29           | 30           | 30           | 30           | 30           | 30           | 30           | 25           | 23           |
| Florida.....                  | 14           | 20           | 23           | 24           | 28           | 31           | 39           | 46           | 47           | 56           | 67           | 72           | 95           | 93           | 94           | 92           | 92           | 70           | 61           | 57           | (1)          |
| South Atlantic.....           | 14           | 15           | 16           | 17           | 19           | 22           | 26           | 33           | 36           | 37           | 40           | 42           | 46           | 47           | 47           | 48           | 48           | 45           | 42           | 38           | ---          |

|                    |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |     |     |     |
|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|
| Kentucky           | .16 | .16 | .17 | .18 | .18 | .19 | .28 | .38 | .41 | .41  | .44  | .40  | .40  | .41  | .43  | .43  | .42  | .42  | .42  | .42 | .38 | .33 |
| Illinois           | .15 | .16 | .17 | .18 | .18 | .21 | .23 | .40 | .45 | .46  | .46  | .48  | .48  | .43  | .46  | .46  | .43  | .43  | .47  | .43 | .40 | .37 |
| Alabama            | .10 | .10 | .11 | .12 | .13 | .14 | .15 | .19 | .19 | .20  | .20  | .21  | .21  | .23  | .23  | .23  | .25  | .25  | .25  | .25 | .25 | .22 |
| Mississippi        | .16 | .17 | .16 | .18 | .18 | .25 | .31 | .37 | .50 | .47  | .51  | .59  | .59  | .57  | .59  | .67  | .68  | .64  | .60  | .52 | .52 | .55 |
| East South Central | .14 | .15 | .15 | .17 | .17 | .19 | .22 | .26 | .36 | .38  | .39  | .41  | .42  | .41  | .43  | .44  | .45  | .45  | .42  | .38 | .36 | .36 |
| Arkansas           | .16 | .16 | .17 | .18 | .18 | .23 | .24 | .30 | .33 | .36  | .35  | .35  | .34  | .28  | .29  | .31  | .32  | .32  | .33  | .30 | .29 | (1) |
| Louisiana          | .18 | .19 | .19 | .21 | .21 | .26 | .34 | .42 | .55 | .54  | .47  | .53  | .57  | .54  | .51  | .53  | .58  | .57  | .53  | .49 | .49 | .49 |
| Oklahoma           | .20 | .17 | .23 | .21 | .24 | .25 | .37 | .38 | .40 | .41  | .44  | .44  | .42  | .39  | .44  | .43  | .46  | .47  | .41  | .34 | .25 | .25 |
| Texas              | .08 | .08 | .09 | .09 | .11 | .12 | .15 | .16 | .16 | .17  | .18  | .19  | .20  | .20  | .20  | .22  | .22  | .23  | .21  | .17 | .16 | .16 |
| West South Central | .11 | .11 | .13 | .13 | .15 | .17 | .22 | .24 | .25 | .25  | .26  | .27  | .27  | .26  | .27  | .28  | .29  | .30  | .27  | .23 | .23 | --- |
| Montana            | .08 | .08 | .08 | .09 | .10 | .10 | .13 | .14 | .15 | .14  | .14  | .13  | .13  | .14  | .13  | .13  | .14  | .14  | .13  | .12 | .12 | .12 |
| Idaho              | .30 | .27 | .30 | .30 | .36 | .38 | .54 | .63 | .64 | .62  | .62  | .57  | .58  | .58  | .63  | .62  | .65  | .65  | .55  | .55 | .51 | .51 |
| Wyoming            | .04 | .04 | .05 | .05 | .05 | .05 | .08 | .09 | .08 | .08  | .07  | .07  | .07  | .07  | .08  | .09  | .09  | .09  | .10  | .08 | .07 | .07 |
| Colorado           | .12 | .13 | .13 | .13 | .16 | .17 | .22 | .27 | .29 | .29  | .28  | .27  | .28  | .29  | .30  | .29  | .29  | .28  | .23  | .22 | .20 | .20 |
| New Mexico         | .04 | .04 | .03 | .03 | .03 | .04 | .05 | .05 | .06 | .05  | .05  | .05  | .06  | .06  | .06  | .07  | .07  | .07  | .08  | .07 | .06 | .06 |
| Arizona            | .08 | .08 | .09 | .08 | .10 | .10 | .13 | .18 | .18 | .15  | .17  | .16  | .19  | .19  | .20  | .19  | .22  | .21  | .21  | .21 | .19 | .16 |
| Utah               | .18 | .20 | .20 | .22 | .25 | .25 | .34 | .47 | .48 | .44  | .47  | .44  | .46  | .50  | .52  | .54  | .52  | .54  | .54  | .51 | .45 | .45 |
| Nevada             | .08 | .11 | .11 | .11 | .13 | .14 | .17 | .21 | .22 | .23  | .22  | .21  | .22  | .22  | .21  | .20  | .17  | .15  | .15  | .15 | .15 | .15 |
| Mountain           | .10 | .10 | .10 | .10 | .12 | .12 | .17 | .20 | .20 | .19  | .19  | .18  | .18  | .19  | .19  | .19  | .20  | .19  | .18  | .17 | .15 | .15 |
| Washington         | .34 | .32 | .32 | .33 | .38 | .42 | .53 | .67 | .68 | .68  | .65  | .61  | .61  | .61  | .63  | .67  | .68  | .68  | .64  | .52 | .44 | .44 |
| Oregon             | .17 | .16 | .17 | .19 | .20 | .22 | .28 | .37 | .38 | .37  | .36  | .36  | .37  | .40  | .40  | .41  | .44  | .40  | .33  | .33 | .33 | (1) |
| California         | .39 | .44 | .47 | .49 | .55 | .55 | .69 | .93 | .94 | 1.02 | 1.04 | 1.03 | 1.07 | 1.13 | 1.14 | 1.18 | 1.14 | 1.13 | 1.06 | .94 | .65 | .65 |
| Pacific            | .33 | .35 | .35 | .39 | .43 | .44 | .55 | .73 | .74 | .78  | .78  | .76  | .78  | .82  | .83  | .86  | .85  | .83  | .77  | .68 | .68 | --- |
| United States      | .24 | .24 | .26 | .28 | .31 | .33 | .41 | .51 | .54 | .54  | .55  | .55  | .56  | .56  | .57  | .58  | .58  | .57  | .53  | .46 | .39 | .39 |

<sup>1</sup> Figures not yet computed.

<sup>2</sup> Preliminary; based on figures for 38 States.

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TABLE 479.—Farm real estate taxes per \$100 of value, by States and geographic divisions, 1913-33

| State and geographic division | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | 1927 | 1928 | 1929 | 1930 | 1931 | 1932 | 1933 |
|-------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| <b>Maine</b>                  | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. |
| New Hampshire                 | 1.26 | 1.28 | 1.29 | 1.18 | 1.20 | 1.21 | 1.20 | 1.64 | 1.55 | 1.55 | 1.67 | 1.02 | 1.67 | 1.74 | 1.73 | 2.06 | 1.81 | 1.95 | 2.19 | 2.45 | (1)  |
| New Jersey                    | 1.16 | 1.25 | 1.29 | 1.27 | 1.20 | 1.31 | 1.43 | 1.64 | 1.50 | 1.71 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | (1)  |
| Vermont                       | .91  | .90  | .88  | .86  | .88  | .98  | .98  | 1.17 | 1.19 | 1.32 | 1.36 | 1.43 | 1.42 | 1.44 | 1.44 | 1.44 | 1.44 | 1.44 | 1.44 | 1.44 | (1)  |
| Massachusetts                 | 1.21 | 1.30 | 1.37 | 1.30 | 1.26 | 1.30 | 1.24 | 1.59 | 1.60 | 1.75 | 1.75 | 1.74 | 1.76 | 1.85 | 1.82 | 1.72 | 1.66 | 1.55 | 1.64 | 1.63 | (1)  |
| Rhode Island                  | .77  | .76  | .82  | .81  | .85  | .88  | .99  | 1.07 | 1.07 | 1.11 | 1.12 | 1.10 | 1.06 | 1.09 | 1.09 | 1.02 | 1.07 | 1.11 | 1.28 | 1.31 | (1)  |
| Connecticut                   | .74  | .81  | .85  | .82  | .85  | .86  | .95  | 1.08 | 1.05 | 1.13 | 1.12 | 1.10 | 1.15 | 1.12 | 1.08 | 1.02 | 1.05 | 1.00 | 1.14 | 1.17 | (1)  |
| <b>New England</b>            | 1.07 | 1.13 | 1.12 | 1.05 | 1.13 | 1.12 | 1.15 | 1.38 | 1.40 | 1.48 | 1.52 | 1.51 | 1.51 | 1.48 | 1.56 | 1.55 | 1.53 | 1.56 | 1.70 | 1.78 | ---  |
| <b>New York</b>               | .82  | .89  | .99  | .93  | .93  | 1.04 | 1.04 | 1.33 | 1.36 | 1.34 | 1.44 | 1.44 | 1.46 | 1.48 | 1.49 | 1.47 | 1.38 | 1.52 | 1.60 | 1.69 | (1)  |
| New Jersey                    | .84  | .88  | .91  | .87  | .89  | 1.03 | 1.03 | 1.04 | 1.30 | 1.30 | 1.44 | 1.44 | 1.47 | 1.54 | 1.53 | 1.50 | 1.58 | 1.68 | 1.64 | 1.64 | (1)  |
| Pennsylvania                  | .87  | .89  | .88  | .87  | .88  | .94  | .90  | 1.14 | 1.33 | 1.40 | 1.44 | 1.46 | 1.49 | 1.54 | 1.54 | 1.50 | 1.63 | 1.74 | 1.80 | 2.11 | 1.88 |
| <b>Middle Atlantic</b>        | .84  | .88  | .92  | .90  | .90  | 1.00 | .99  | 1.25 | 1.37 | 1.41 | 1.40 | 1.40 | 1.48 | 1.51 | 1.52 | 1.53 | 1.51 | 1.63 | 1.69 | 1.84 | ---  |
| <b>Ohio</b>                   | .72  | .74  | .73  | .73  | .73  | .70  | .74  | 1.11 | 1.20 | 1.34 | 1.34 | 1.46 | 1.53 | 1.65 | 1.79 | 1.70 | 1.79 | 1.89 | 1.87 | 1.93 | 1.64 |
| Indiana                       | .72  | .73  | .76  | .80  | .76  | .74  | .71  | 1.08 | 1.49 | 1.62 | 1.63 | 1.70 | 1.73 | 1.85 | 1.87 | 1.89 | 1.94 | 2.18 | 2.46 | 1.92 | 1.09 |
| Illinois                      | .40  | .38  | .42  | .46  | .48  | .43  | .45  | .55  | .71  | .73  | .74  | .79  | .88  | .96  | .98  | .98  | 1.04 | 1.21 | 1.31 | 1.44 | 1.03 |
| Michigan                      | 1.04 | 1.05 | 1.14 | 1.09 | 1.12 | 1.19 | 1.42 | 1.62 | 1.76 | 1.76 | 1.78 | 1.74 | 1.81 | 1.84 | 1.99 | 1.90 | 2.04 | 2.08 | 2.18 | 1.89 | (1)  |
| Wisconsin                     | .76  | .72  | .71  | .73  | .74  | .75  | .90  | 1.04 | 1.16 | 1.14 | 1.10 | 1.18 | 1.14 | 1.20 | 1.32 | 1.30 | 1.43 | 1.52 | 1.44 | 1.39 | (1)  |
| <b>East North Central</b>     | .63  | .61  | .65  | .69  | .69  | .67  | .70  | .91  | 1.12 | 1.14 | 1.19 | 1.23 | 1.29 | 1.37 | 1.44 | 1.45 | 1.51 | 1.65 | 1.73 | 1.67 | ---  |
| <b>Minnesota</b>              | .54  | .61  | .65  | .65  | .68  | .50  | .59  | .70  | .83  | .80  | .98  | .94  | 1.00 | 1.09 | 1.14 | 1.20 | 1.25 | 1.45 | 1.65 | 1.64 | 1.56 |
| Iowa                          | .50  | .46  | .44  | .45  | .48  | .44  | .41  | .62  | .69  | .76  | .80  | .83  | .81  | .86  | .88  | .80  | .98  | 1.14 | 1.28 | 1.59 | 1.28 |
| Missouri                      | .25  | .27  | .28  | .26  | .27  | .26  | .28  | .34  | .54  | .58  | .63  | .67  | .75  | .80  | .83  | .80  | .89  | .98  | 1.06 | 1.17 | .97  |
| North Dakota                  | .43  | .53  | .61  | .61  | .69  | .67  | 1.05 | 1.11 | 1.18 | 1.22 | 1.22 | 1.28 | 1.30 | 1.39 | 1.49 | 1.53 | 1.54 | 1.72 | 1.75 | 1.71 | 1.54 |
| South Dakota                  | .33  | .38  | .38  | .38  | .43  | .46  | .49  | .66  | .71  | .82  | .83  | .96  | 1.05 | 1.17 | 1.19 | 1.24 | 1.30 | 1.40 | 1.38 | 1.54 | .96  |
| Nebraska                      | .28  | .35  | .37  | .37  | .38  | .32  | .32  | .52  | .67  | .60  | .64  | .65  | .70  | .72  | .80  | .80  | .81  | .84  | .95  | 1.05 | .85  |
| Kansas                        | .51  | .51  | .51  | .50  | .53  | .51  | .56  | .68  | .92  | .83  | .94  | .90  | 1.06 | 1.10 | 1.15 | 1.17 | 1.20 | 1.24 | 1.38 | 1.35 | 1.16 |
| <b>West North Central</b>     | .43  | .44  | .44  | .44  | .46  | .44  | .47  | .60  | .76  | .76  | .84  | .86  | .90  | .96  | 1.00 | 1.02 | 1.08 | 1.20 | 1.31 | 1.36 | 1.20 |
| <b>Delaware</b>               | .52  | .59  | .60  | .60  | .69  | .73  | .89  | 1.04 | .95  | .98  | 1.04 | 1.04 | 1.05 | 1.14 | .90  | .88  | .72  | .72  | .82  | .92  | .92  |
| Maryland                      | .72  | .78  | .77  | .78  | .79  | .80  | .74  | .90  | .97  | 1.03 | 1.08 | 1.08 | 1.12 | 1.15 | 1.15 | 1.10 | 1.13 | 1.17 | 1.28 | 1.43 | 1.11 |
| Virginia                      | .40  | .45  | .48  | .44  | .41  | .37  | .36  | .43  | .61  | .58  | .68  | .64  | .68  | .70  | .67  | .67  | .76  | .86  | .82  | .77  | .69  |
| West Virginia                 | .44  | .40  | .48  | .47  | .59  | .53  | .65  | .70  | .80  | .87  | .98  | 1.00 | 1.09 | 1.18 | 1.20 | 1.34 | 1.28 | 1.24 | 1.52 | 1.86 | (1)  |
| North Carolina                | .41  | .42  | .44  | .39  | .38  | .35  | .37  | .71  | 1.01 | .81  | .78  | .88  | .96  | 1.09 | 1.20 | 1.34 | 1.28 | 1.48 | 1.52 | 1.89 | .20  |
| South Carolina                | .52  | .50  | .56  | .50  | .50  | .52  | .43  | .66  | 1.01 | .88  | .78  | .88  | .96  | 1.09 | 1.04 | 1.08 | 1.18 | 1.46 | 1.56 | 1.85 | 1.43 |
| Georgia                       | .64  | .62  | .72  | .68  | .64  | .67  | .51  | .79  | .99  | 1.06 | .90  | 1.08 | 1.09 | 1.20 | 1.14 | 1.10 | 1.10 | 1.27 | 1.32 | 1.74 | 1.36 |
| Florida                       | .51  | .79  | .85  | .84  | .85  | .83  | .84  | .80  | .81  | .95  | .90  | .88  | .88  | 1.06 | 1.10 | 1.08 | 1.10 | .86  | .88  | 1.96 | (1)  |
| <b>South Atlantic</b>         | .52  | .58  | .56  | .54  | .53  | .51  | .49  | .70  | .89  | .84  | .88  | .91  | .97  | 1.06 | 1.06 | 1.08 | 1.07 | 1.12 | 1.25 | 1.36 | ---  |

|                         |     |     |     |     |     |      |     |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |
|-------------------------|-----|-----|-----|-----|-----|------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Kentucky.....           | .51 | .52 | .50 | .47 | .41 | .37  | .46 | .73  | .90  | .92  | 1.03 | .94  | .92  | .96  | 1.02 | 1.00 | .96  | 1.06 | 1.26 | 1.36 | 1.39  | 1.18 |
| Tennessee.....          | .64 | .60 | .58 | .56 | .55 | .52  | .50 | .89  | 1.07 | .97  | 1.05 | 1.13 | 1.02 | 1.11 | 1.12 | 1.12 | 1.13 | 1.23 | 1.34 | 1.52 | 1.31  |      |
| Alabama.....            | .64 | .66 | .73 | .76 | .66 | .63  | .64 | .82  | 1.00 | .88  | .87  | .81  | .81  | .81  | .87  | .84  | .86  | .96  | 1.23 | 1.31 | 1.11  |      |
| Mississippi.....        | .80 | .89 | .72 | .76 | .96 | 1.01 | .85 | 1.09 | 1.58 | 1.75 | 1.99 | 2.06 | 1.99 | 1.96 | 1.97 | 2.15 | 2.06 | 2.12 | 2.43 | 2.66 | 2.50  |      |
| East South Central..... | .58 | .65 | .59 | .61 | .58 | .58  | .56 | .95  | 1.08 | 1.08 | 1.18 | 1.20 | 1.15 | 1.20 | 1.22 | 1.22 | 1.22 | 1.34 | 1.51 | 1.66 | 1.50  |      |
| Arkansas.....           | .84 | .89 | .82 | .72 | .80 | .73  | .70 | .91  | .98  | 1.08 | 1.04 | 1.01 | 1.01 | .88  | .86  | .90  | .93  | 1.12 | 1.32 | 1.56 | 1.40  |      |
| Louisiana.....          | .74 | .81 | .74 | .77 | .75 | .90  | .89 | .87  | 1.50 | 1.31 | 1.41 | 1.44 | 1.44 | 1.38 | 1.27 | 1.25 | 1.29 | 1.39 | 1.52 | 1.62 | (1)   |      |
| Oklahoma.....           | .75 | .68 | .84 | .71 | .71 | .69  | .87 | .92  | 1.12 | 1.20 | 1.36 | 1.30 | 1.22 | 1.12 | 1.24 | 1.20 | 1.25 | 1.39 | 1.50 | 1.54 | 1.04  |      |
| Texas.....              | .40 | .41 | .46 | .42 | .44 | .46  | .46 | .55  | .64  | .70  | .69  | .68  | .70  | .73  | .72  | .78  | .77  | .90  | 1.04 | .98  | .86   |      |
| West South Central..... | .52 | .54 | .61 | .55 | .55 | .58  | .61 | .74  | .88  | .90  | .92  | .90  | .88  | .86  | .88  | .90  | .93  | 1.07 | 1.19 | 1.21 | ----- |      |
| Montana.....            | .41 | .42 | .45 | .49 | .52 | .49  | .59 | .75  | .88  | .89  | .94  | .94  | .99  | 1.12 | 1.06 | 1.07 | 1.18 | 1.21 | 1.36 | 1.54 | 1.51  |      |
| Idaho.....              | .68 | .64 | .70 | .62 | .67 | .64  | .78 | .98  | 1.19 | 1.20 | 1.26 | 1.24 | 1.30 | 1.31 | 1.43 | 1.40 | 1.46 | 1.48 | 1.50 | 1.87 | 1.71  |      |
| Wyoming.....            | .34 | .33 | .46 | .45 | .36 | .30  | .40 | .55  | .55  | .64  | .63  | .76  | .80  | .81  | .92  | .94  | .98  | 1.05 | 1.44 | 1.44 | 1.26  |      |
| Colorado.....           | .42 | .49 | .46 | .46 | .56 | .56  | .62 | .81  | .92  | 1.00 | 1.10 | 1.10 | 1.19 | 1.34 | 1.39 | 1.34 | 1.34 | 1.32 | 1.35 | 1.56 | 1.42  |      |
| New Mexico.....         | .48 | .49 | .40 | .37 | .37 | .48  | .55 | .64  | .85  | .75  | .77  | .80  | .96  | .94  | .93  | 1.06 | 1.04 | 1.05 | 1.47 | 1.52 | 1.28  |      |
| Arizona.....            | .25 | .28 | .34 | .31 | .37 | .36  | .44 | .71  | .83  | .83  | 1.06 | 1.23 | 1.32 | 1.27 | 1.28 | 1.14 | 1.27 | 1.20 | 1.42 | 1.49 | 1.26  |      |
| Utah.....               | .56 | .64 | .61 | .62 | .68 | .59  | .70 | 1.19 | 1.24 | 1.13 | 1.22 | 1.14 | 1.19 | 1.29 | 1.34 | 1.38 | 1.33 | 1.41 | 1.76 | 1.96 | 1.71  |      |
| Nevada.....             | .42 | .57 | .53 | .58 | .63 | .58  | .60 | .84  | .96  | 1.12 | 1.17 | 1.26 | 1.37 | 1.38 | 1.32 | 1.27 | 1.09 | .98  | 1.21 | 1.45 | 1.45  |      |
| Mountain.....           | .47 | .49 | .50 | .48 | .54 | .50  | .63 | .84  | .94  | .97  | 1.06 | 1.09 | 1.12 | 1.22 | 1.22 | 1.22 | 1.26 | 1.24 | 1.44 | 1.65 | 1.44  |      |
| Washington.....         | .64 | .63 | .62 | .68 | .64 | .69  | .76 | 1.01 | 1.10 | 1.15 | 1.11 | 1.06 | 1.06 | 1.07 | 1.10 | 1.18 | 1.20 | 1.21 | 1.35 | 1.36 | 1.15  |      |
| Oregon.....             | .40 | .40 | .42 | .46 | .46 | .48  | .56 | .73  | .80  | .82  | .81  | .83  | .89  | .99  | 1.01 | 1.07 | 1.15 | 1.06 | 1.05 | 1.29 | (1)   |      |
| California.....         | .56 | .62 | .64 | .59 | .64 | .62  | .66 | .86  | .86  | .92  | .93  | .90  | .94  | 1.00 | 1.01 | 1.05 | 1.02 | 1.02 | 1.13 | 1.23 | .84   |      |
| Pacific.....            | .56 | .59 | .59 | .59 | .62 | .61  | .66 | .87  | .90  | .95  | .95  | .92  | .95  | 1.01 | 1.04 | 1.08 | 1.06 | 1.06 | 1.10 | 1.26 | ----- |      |
| United States.....      | .55 | .56 | .57 | .57 | .58 | .57  | .59 | .79  | .94  | .96  | 1.01 | 1.03 | 1.07 | 1.12 | 1.15 | 1.18 | 1.19 | 1.28 | 1.42 | 1.50 | 21.22 |      |

1 Figures not yet computed.

2 Preliminary; based on figures for 35 States.

Bureau of Agricultural Economics. These data are derived from the figures shown in the preceding table and the indexes of farm real estate values, which are estimated annually by the Bureau.



TABLE 480.—*Bankruptcies among farmers, number and percentage of total, by geographic divisions, fiscal years 1910-34*

| Year ended June 30 | New England                  |                                  | Middle Atlantic              |                                  | East North Central           |                                  | West North Central           |                                  | South Atlantic               |                                  |
|--------------------|------------------------------|----------------------------------|------------------------------|----------------------------------|------------------------------|----------------------------------|------------------------------|----------------------------------|------------------------------|----------------------------------|
|                    | Bank-rupt-cies among farmers | Per-cent of total bank-rupt-cies | Bank-rupt-cies among farmers | Per-cent of total bank-rupt-cies | Bank-rupt-cies among farmers | Per-cent of total bank-rupt-cies | Bank-rupt-cies among farmers | Per-cent of total bank-rupt-cies | Bank-rupt-cies among farmers | Per-cent of total bank-rupt-cies |
|                    | Number                       | Percent                          | Number                       | Percent                          | Number                       | Percent                          | Number                       | Percent                          | Number                       | Percent                          |
| 1910.....          | 123                          | 6.0                              | 52                           | 1.8                              | 98                           | 3.2                              | 287                          | 15.9                             | 63                           | 4.5                              |
| 1911.....          | 85                           | 4.4                              | 48                           | 1.6                              | 89                           | 3.4                              | 167                          | 11.0                             | 78                           | 5.1                              |
| 1912.....          | 148                          | 7.4                              | 58                           | 1.7                              | 78                           | 2.7                              | 219                          | 14.2                             | 79                           | 4.7                              |
| 1913.....          | 81                           | 4.0                              | 66                           | 1.8                              | 143                          | 5.0                              | 258                          | 13.7                             | 85                           | 4.5                              |
| 1914.....          | 88                           | 4.0                              | 63                           | 2.0                              | 91                           | 2.8                              | 239                          | 14.6                             | 100                          | 4.5                              |
| 1915.....          | 112                          | 4.8                              | 90                           | 2.4                              | 94                           | 2.9                              | 230                          | 13.8                             | 177                          | 5.5                              |
| 1916.....          | 143                          | 5.3                              | 88                           | 2.0                              | 146                          | 3.9                              | 276                          | 12.6                             | 369                          | 9.8                              |
| 1917.....          | 152                          | 4.8                              | 130                          | 2.7                              | 142                          | 3.6                              | 325                          | 13.6                             | 407                          | 12.2                             |
| 1918.....          | 125                          | 4.3                              | 97                           | 2.4                              | 126                          | 3.6                              | 267                          | 11.4                             | 410                          | 13.8                             |
| 1919.....          | 104                          | 4.1                              | 89                           | 2.4                              | 75                           | 2.2                              | 156                          | 8.1                              | 291                          | 15.8                             |
| 1920.....          | 72                           | 3.8                              | 67                           | 2.2                              | 33                           | 3.3                              | 213                          | 12.0                             | 169                          | 10.1                             |
| 1921.....          | 91                           | 6.2                              | 77                           | 3.3                              | 62                           | 3.6                              | 324                          | 20.6                             | 297                          | 13.7                             |
| 1922.....          | 92                           | 4.9                              | 77                           | 2.6                              | 247                          | 9.0                              | 1,066                        | 40.3                             | 678                          | 17.0                             |
| 1923.....          | 146                          | 4.9                              | 148                          | 3.1                              | 569                          | 11.5                             | 2,005                        | 46.1                             | 959                          | 17.0                             |
| 1924.....          | 196                          | 5.8                              | 171                          | 3.2                              | 684                          | 12.2                             | 2,735                        | 42.5                             | 1,085                        | 16.9                             |
| 1925.....          | 169                          | 5.2                              | 190                          | 2.6                              | 760                          | 13.4                             | 2,839                        | 39.2                             | 1,037                        | 17.6                             |
| 1926.....          | 145                          | 4.6                              | 224                          | 3.4                              | 844                          | 11.3                             | 2,813                        | 35.4                             | 747                          | 12.7                             |
| 1927.....          | 105                          | 3.1                              | 224                          | 3.1                              | 719                          | 9.2                              | 2,401                        | 30.3                             | 585                          | 10.0                             |
| 1928.....          | 162                          | 3.5                              | 274                          | 3.5                              | 874                          | 9.3                              | 1,729                        | 24.2                             | 635                          | 9.9                              |
| 1929.....          | 145                          | 3.2                              | 270                          | 3.2                              | 980                          | 8.8                              | 1,471                        | 21.2                             | 515                          | 7.0                              |
| 1930.....          | 141                          | 2.8                              | 305                          | 3.6                              | 973                          | 8.0                              | 1,267                        | 19.2                             | 491                          | 5.9                              |
| 1931.....          | 104                          | 2.3                              | 353                          | 3.6                              | 1,025                        | 8.1                              | 1,010                        | 17.9                             | 455                          | 5.8                              |
| 1932.....          | 186                          | 3.8                              | 372                          | 3.8                              | 1,580                        | 10.7                             | 1,099                        | 20.5                             | 467                          | 5.7                              |
| 1933.....          | 164                          | 3.4                              | 514                          | 3.7                              | 2,020                        | 13.3                             | 1,277                        | 23.8                             | 601                          | 7.4                              |
| 1934.....          | 171                          | 4.1                              | 420                          | 3.5                              | 1,384                        | 9.0                              | 983                          | 22.0                             | 699                          | 9.7                              |

| Year ended June 30 | East South Central           |                                  | West South Central           |                                  | Mountain                     |                                  | Pacific                      |                                  | United States                |                                  |
|--------------------|------------------------------|----------------------------------|------------------------------|----------------------------------|------------------------------|----------------------------------|------------------------------|----------------------------------|------------------------------|----------------------------------|
|                    | Bank-rupt-cies among farmers | Per-cent of total bank-rupt-cies | Bank-rupt-cies among farmers | Per-cent of total bank-rupt-cies | Bank-rupt-cies among farmers | Per-cent of total bank-rupt-cies | Bank-rupt-cies among farmers | Per-cent of total bank-rupt-cies | Bank-rupt-cies among farmers | Per-cent of total bank-rupt-cies |
|                    | Number                       | Percent                          | Number                       | Percent                          | Number                       | Percent                          | Number                       | Percent                          | Number                       | Percent                          |
| 1910.....          | 38                           | 2.8                              | 66                           | 8.3                              | 35                           | 7.1                              | 87                           | 9.0                              | 849                          | 5.7                              |
| 1911.....          | 66                           | 5.3                              | 72                           | 8.2                              | 35                           | 7.0                              | 40                           | 4.2                              | 679                          | 4.8                              |
| 1912.....          | 91                           | 5.7                              | 62                           | 7.0                              | 55                           | 9.1                              | 47                           | 4.6                              | 837                          | 5.4                              |
| 1913.....          | 83                           | 4.1                              | 89                           | 7.4                              | 66                           | 8.9                              | 71                           | 5.4                              | 942                          | 5.4                              |
| 1914.....          | 100                          | 4.2                              | 81                           | 6.3                              | 118                          | 15.7                             | 115                          | 6.9                              | 1,045                        | 5.6                              |
| 1915.....          | 127                          | 4.4                              | 97                           | 9.3                              | 159                          | 19.2                             | 100                          | 5.9                              | 1,246                        | 5.9                              |
| 1916.....          | 164                          | 6.8                              | 178                          | 9.4                              | 179                          | 17.0                             | 115                          | 6.1                              | 1,658                        | 6.9                              |
| 1917.....          | 184                          | 6.8                              | 217                          | 12.2                             | 193                          | 17.4                             | 156                          | 7.3                              | 1,906                        | 7.5                              |
| 1918.....          | 179                          | 5.3                              | 186                          | 15.1                             | 105                          | 11.4                             | 137                          | 6.7                              | 1,632                        | 7.0                              |
| 1919.....          | 126                          | 5.6                              | 164                          | 14.9                             | 102                          | 11.9                             | 100                          | 5.8                              | 1,207                        | 6.3                              |
| 1920.....          | 108                          | 6.8                              | 95                           | 10.0                             | 107                          | 16.2                             | 89                           | 5.9                              | 997                          | 6.4                              |
| 1921.....          | 100                          | 3.9                              | 124                          | 15.7                             | 177                          | 23.8                             | 97                           | 7.2                              | 1,363                        | 9.0                              |
| 1922.....          | 201                          | 4.9                              | 264                          | 19.5                             | 419                          | 38.2                             | 192                          | 11.0                             | 3,203                        | 14.4                             |
| 1923.....          | 420                          | 9.1                              | 539                          | 20.4                             | 730                          | 43.3                             | 424                          | 16.3                             | 5,940                        | 17.4                             |
| 1924.....          | 483                          | 9.7                              | 788                          | 22.3                             | 1,040                        | 46.3                             | 540                          | 15.7                             | 7,772                        | 18.7                             |
| 1925.....          | 517                          | 9.7                              | 650                          | 23.6                             | 1,071                        | 41.8                             | 589                          | 14.6                             | 7,872                        | 17.8                             |
| 1926.....          | 579                          | 9.5                              | 764                          | 25.6                             | 1,142                        | 42.7                             | 511                          | 11.9                             | 7,769                        | 16.5                             |
| 1927.....          | 615                          | 9.7                              | 567                          | 20.7                             | 609                          | 31.8                             | 468                          | 10.0                             | 6,296                        | 13.1                             |
| 1928.....          | 521                          | 6.9                              | 561                          | 19.5                             | 420                          | 24.0                             | 453                          | 8.5                              | 5,679                        | 10.6                             |
| 1929.....          | 352                          | 4.5                              | 484                          | 17.3                             | 335                          | 20.9                             | 387                          | 6.1                              | 4,939                        | 8.7                              |
| 1930.....          | 336                          | 3.8                              | 375                          | 14.7                             | 260                          | 17.1                             | 326                          | 4.6                              | 4,464                        | 7.4                              |
| 1931.....          | 358                          | 3.6                              | 282                          | 10.5                             | 201                          | 13.3                             | 255                          | 4.4                              | 4,023                        | 6.7                              |
| 1932.....          | 311                          | 3.2                              | 308                          | 10.2                             | 215                          | 15.2                             | 311                          | 5.0                              | 4,849                        | 7.7                              |
| 1933.....          | 494                          | 6.0                              | 371                          | 9.7                              | 167                          | 13.1                             | 309                          | 5.1                              | 5,017                        | 8.9                              |
| 1934.....          | 399                          | 5.9                              | 329                          | 13.3                             | 131                          | 13.0                             | 200                          | 3.8                              | 4,716                        | 8.0                              |

TABLE 481.—*Farm-mortgage debt: Estimated total for all farms, by States, Jan. 1, selected years from 1910 to 1930*

| State and division        | 1910 <sup>1</sup> | 1920             | 1925             | 1928             | 1930 <sup>2</sup> |
|---------------------------|-------------------|------------------|------------------|------------------|-------------------|
|                           | 1,000<br>dollars  | 1,000<br>dollars | 1,000<br>dollars | 1,000<br>dollars | 1,000<br>dollars  |
| Maine.....                | 13, 210           | 20, 890          | 26, 097          | 25, 252          | 24, 823           |
| New Hampshire.....        | 5, 870            | 8, 600           | 7, 732           | 7, 780           | 9, 901            |
| Vermont.....              | 15, 850           | 29, 040          | 28, 001          | 28, 322          | 33, 102           |
| Massachusetts.....        | 22, 890           | 34, 180          | 32, 207          | 31, 262          | 42, 550           |
| Rhode Island.....         | 2, 210            | 2, 350           | 2, 435           | 2, 455           | 3, 854            |
| Connecticut.....          | 19, 080           | 25, 800          | 27, 276          | 27, 423          | 30, 514           |
| New England.....          | 76, 110           | 120, 860         | 123, 748         | 122, 494         | 144, 744          |
| New York.....             | 154, 190          | 224, 060         | 226, 776         | 219, 812         | 247, 633          |
| New Jersey.....           | 31, 720           | 59, 500          | 41, 741          | 40, 370          | 56, 884           |
| Pennsylvania.....         | 85, 620           | 133, 080         | 120, 251         | 116, 432         | 174, 037          |
| Middle Atlantic.....      | 281, 530          | 396, 640         | 388, 798         | 376, 614         | 478, 554          |
| Ohio.....                 | 113, 320          | 210, 760         | 214, 409         | 222, 101         | 259, 630          |
| Indiana.....              | 111, 280          | 206, 600         | 204, 483         | 277, 269         | 269, 989          |
| Illinois.....             | 266, 730          | 502, 860         | 650, 353         | 685, 365         | 681, 286          |
| Michigan.....             | 109, 970          | 215, 740         | 228, 089         | 235, 399         | 230, 377          |
| Wisconsin.....            | 193, 600          | 455, 470         | 504, 553         | 529, 992         | 502, 549          |
| East North Central.....   | 794, 950          | 1, 591, 420      | 1, 861, 887      | 1, 950, 126      | 1, 890, 811       |
| Minnesota.....            | 146, 160          | 455, 540         | 553, 794         | 558, 458         | 530, 025          |
| Iowa.....                 | 431, 500          | 1, 098, 970      | 1, 424, 352      | 1, 402, 178      | 1, 098, 610       |
| Missouri.....             | 202, 650          | 395, 790         | 449, 022         | 447, 351         | 428, 227          |
| North Dakota.....         | 101, 450          | 267, 780         | 226, 714         | 230, 250         | 204, 598          |
| South Dakota.....         | 88, 700           | 278, 880         | 372, 004         | 370, 946         | 295, 725          |
| Nebraska.....             | 161, 850          | 416, 860         | 617, 930         | 599, 418         | 560, 973          |
| Kansas.....               | 163, 770          | 295, 870         | 482, 596         | 447, 586         | 487, 122          |
| West North Central.....   | 1, 296, 080       | 3, 199, 690      | 4, 126, 402      | 4, 056, 187      | 3, 605, 280       |
| Delaware.....             | 6, 500            | 8, 990           | 8, 695           | 9, 469           | 11, 841           |
| Maryland.....             | 29, 580           | 49, 230          | 50, 422          | 54, 980          | 64, 825           |
| District of Columbia..... | 290               | 340              | 304              | 354              | 642               |
| Virginia.....             | 24, 000           | 61, 600          | 79, 709          | 87, 117          | 88, 865           |
| West Virginia.....        | 8, 210            | 15, 960          | 18, 570          | 20, 155          | 24, 283           |
| North Carolina.....       | 18, 960           | 56, 580          | 78, 606          | 90, 866          | 104, 979          |
| South Carolina.....       | 20, 530           | 51, 220          | 68, 735          | 77, 214          | 67, 507           |
| Georgia.....              | 28, 800           | 83, 840          | 109, 060         | 123, 305         | 100, 845          |
| Florida.....              | 4, 380            | 19, 710          | 25, 508          | 28, 436          | 45, 140           |
| South Atlantic.....       | 141, 250          | 347, 470         | 493, 609         | 491, 896         | 503, 927          |
| Kentucky.....             | 40, 510           | 104, 100         | 94, 549          | 103, 798         | 97, 668           |
| Tennessee.....            | 26, 850           | 83, 130          | 85, 857          | 96, 711          | 87, 313           |
| Alabama.....              | 24, 830           | 55, 450          | 66, 410          | 69, 488          | 83, 764           |
| Mississippi.....          | 31, 320           | 77, 420          | 109, 562         | 111, 500         | 96, 864           |
| East South Central.....   | 123, 560          | 320, 100         | 356, 373         | 381, 497         | 365, 609          |
| Arkansas.....             | 22, 200           | 76, 870          | 97, 809          | 103, 464         | 85, 577           |
| Louisiana.....            | 19, 090           | 41, 250          | 57, 010          | 61, 790          | 61, 379           |
| Oklahoma.....             | 77, 680           | 188, 890         | 218, 968         | 228, 513         | 214, 033          |
| Texas.....                | 172, 240          | 396, 670         | 485, 587         | 507, 516         | 543, 951          |
| West South Central.....   | 291, 210          | 703, 680         | 860, 269         | 901, 252         | 904, 940          |
| Montana.....              | 19, 620           | 154, 940         | 116, 616         | 104, 862         | 129, 200          |
| Idaho.....                | 24, 270           | 115, 350         | 107, 355         | 100, 033         | 106, 998          |
| Wyoming.....              | 7, 820            | 32, 970          | 43, 364          | 40, 922          | 42, 943           |
| Colorado.....             | 41, 800           | 138, 400         | 153, 727         | 144, 464         | 146, 462          |
| New Mexico.....           | 4, 810            | 23, 670          | 28, 764          | 26, 900          | 30, 729           |
| Arizona.....              | 4, 880            | 31, 790          | 29, 545          | 29, 006          | 28, 743           |
| Utah.....                 | 7, 170            | 35, 550          | 39, 152          | 36, 367          | 46, 273           |
| Nevada.....               | 3, 340            | 11, 880          | 15, 244          | 18, 997          | 14, 737           |
| Mountain.....             | 113, 710          | 544, 560         | 533, 787         | 496, 551         | 546, 000          |
| Washington.....           | 45, 040           | 116, 740         | 121, 371         | 120, 523         | 131, 269          |
| Oregon.....               | 34, 950           | 91, 090          | 105, 503         | 110, 875         | 116, 805          |
| California.....           | 22, 080           | 425, 460         | 442, 868         | 460, 511         | 548, 421          |
| Pacific.....              | 202, 070          | 633, 290         | 669, 742         | 691, 909         | 796, 535          |
| United States.....        | 3, 320, 470       | 7, 857, 700      | 9, 360, 620      | 9, 468, 526      | 9, 241, 390       |

<sup>1</sup> Revised.<sup>2</sup> Preliminary. The figures for some States are subject to considerable revision.

Bureau of Agricultural Economics.

TABLE 482.—Agricultural loans from selected Federal and other agencies, outstanding at close of year, 1917-34

| End of year | Farm-mortgage loans by—          |                                       |                                     |   |                            | Federal inter-mediate credit bank loans to— |                                   | Pro-duction credit associ-ations | Re-gional agricul-tural credit corpor-ations <sup>1</sup> | Emer-gency crop loan offices <sup>1</sup> |
|-------------|----------------------------------|---------------------------------------|-------------------------------------|---|----------------------------|---|-----------------------------------|----------------------------------|---|---|
|             | Fed-eral land banks <sup>1</sup> | Land bank com-mis-sioner <sup>1</sup> | Joint-stock land banks <sup>1</sup> | Loans of 39 life in-surance com-panies <sup>2</sup> | Mem-ber banks <sup>3</sup> | Coop-erative associ-ation <sup>1</sup>      | Finan-cing agen-cies <sup>1</sup> |                                  |   |   |
|             | Million dollars                  | Million dollars                       | Million dollars                     | Million dollars                                     | Million dollars            | Million dollars                             | Million dollars                   | Million dollars                  | Million dollars   | Million dollars                           |
| 1917        | 30                               |                                       |                                     |   |                            |   |                                   |                                  |   |   |
| 1918        | 156                              |                                       | 8                                   |   |                            |   |                                   |                                  |   |   |
| 1919        | 294                              |                                       | 60                                  |   |                            |   |                                   |                                  |   |   |
| 1920        | 350                              |                                       | 78                                  |   |                            |   |                                   |                                  |   |   |
| 1921        | 433                              |                                       | 85                                  |   |                            |   |                                   |                                  |   |   |
| 1922        | 639                              |                                       | 219                                 |   |                            |   |                                   |                                  |   |   |
| 1923        | 800                              |                                       | 393                                 | 1,335   |                            | 34  | 9                                 |                                  |   |   |
| 1924        | 928                              |                                       | 446                                 | 1,452   |                            | 44  | 19                                |                                  |   |   |
| 1925        | 1,006                            |                                       | 546                                 | 1,523   |                            | 54  | 26                                |                                  |   | 1   |
| 1926        | 1,008                            |                                       | 632                                 | 1,588   | 489                        | 53  | 40                                |                                  |   | 1   |
| 1927        | 1,156                            |                                       | 667                                 | 1,618   | 478                        | 32  | 44                                |                                  |   | 1   |
| 1928        | 1,194                            |                                       | 605                                 | 1,606   | 444                        | 36  | 45                                |                                  |   | 1   |
| 1929        | 1,198                            |                                       | 585                                 | 1,591   | 388                        | 26  | 50                                |                                  |   | 7   |
| 1930        | 1,188                            |                                       | 553                                 | 1,554   | 387                        | 64  | 66                                |                                  |   | 8   |
| 1931        | 1,163                            |                                       | 530                                 | 1,512   | 359                        | 45  | 75                                |                                  |   | 60  |
| 1932        | 1,117                            |                                       | 409                                 | 1,402   | 356                        | 10  | 83                                |                                  | 24  | 89  |
| 1933        | 1,214                            | 71                                    | 354                                 | 1,234   | 318                        | 15  | 61                                | (4)                              | 145   | 90  |
| 1934        | 1,896                            | 617                                   |                                     | 950   | 262                        | 34  | 56                                | 61                               | 87  | 110                                       |

<sup>1</sup> Farm Credit Administration. Beginning 1928, loans from joint-stock land banks in receivership not included.

<sup>2</sup> Association of Life Insurance Presidents. Reports cover operations of 39 companies representing 82 percent of the admitted assets of all legal reserve life companies in the United States.

<sup>3</sup> Federal Reserve Board.

<sup>4</sup> Less than \$27,000.

<sup>5</sup> Includes \$32,000,000 drought loans.

Bureau of Agricultural Economics.

TABLE 483.—Selected interest and discount rates on current loans, and bond yields, 1917-34

| Year | 12 Federal land banks' rates to borrow-ers <sup>1</sup> | 12 Federal inter-mediate credit banks' loan and discount rates <sup>1</sup> |           | Yield on Federal land bank bonds | Rates on commer-cial paper (4-6 months average) <sup>2</sup> | Federal Reserve bank discount rates, New York <sup>2</sup> |
|------|---|---|-----------|----------------------------------|--|--|
|      |   | Loans   | Discounts |                                  |  |  |
|      | Average   | Average   | Average   | Average                          | Average  | Range  |
| 1917 | 5.05  |   |           | 4.33                             | 4.74   | 4 - 4½   |
| 1918 | 5.45  |   |           | 4.39                             | 5.86   | 4¼ - 4¾  |
| 1919 | 5.50  |   |           | 4.22                             | 5.42   | 4¾   |
| 1920 | 5.50  |   |           | 5.14                             | 7.46   | 4½ - 7   |
| 1921 | 5.88  |   |           | 5.11                             | 6.56   | 4½ - 7   |
| 1922 | 5.71  |   |           | 4.50                             | 4.48   | 4 - 4½   |
| 1923 | 5.50  | 5.50  | 5.50      | 4.39                             | 5.01   | 4 - 4½   |
| 1924 | 5.50  | 5.12  | 5.23      | 4.55                             | 3.87   | 3 - 4½   |
| 1925 | 5.46  | 4.59  | 5.04      | 4.34                             | 4.03   | 3 - 3½   |
| 1926 | 5.30  | 4.70  | 4.90      | 4.27                             | 4.34   | 3½ - 4   |
| 1927 | 5.11  | 4.51  | 4.73      | 4.08                             | 4.10   | 3¼ - 4   |
| 1928 | 5.05  | 4.81  | 4.91      | 4.26                             | 4.85   | 3½ - 5   |
| 1929 | 5.32  | 5.56  | 5.61      | 4.78                             | 5.84   | 4½ - 6   |
| 1930 | 5.63  | 4.53  | 4.54      | 4.70                             | 3.58   | 2½ - 4½  |
| 1931 | 5.63  | 4.08  | 4.08      | 5.34                             | 2.63   | 1½ - 3½  |
| 1932 | 5.61  | 4.23  | 4.23      | 5.59                             | 2.73   | 2½ - 3½  |
| 1933 | 5.30  | 3.10  | 3.10      | 5.43                             | 1.72   | 2 - 3½   |
| 1934 | 5.00  | 2.29  | 2.29      | 3.68                             | 1.01   | 1¼ - 2   |

<sup>1</sup> Farm Credit Administration. Figures for the Federal land banks are rates to borrowers through national farm loan associations. Each Federal land bank district or Federal intermediate credit bank district is given equal weight in computing the respective rates for these 2 types of credit, and the rate for each district is weighted by the number of days in force. Beginning May 1933, rates payable by borrowers on new Federal land bank loans were 2 percent less than the contract rate cited, for a period of 5 years, as provided by the Emergency Farm Mortgage Act.

<sup>2</sup> Federal Reserve Board.

Bureau of Agricultural Economics.

TABLE 484.—*Studies of farm family living*[Data from 1,663 families in 10 States for one year in the period 1928-34]<sup>1</sup>

| State, county, and locality                      | Key: | Year of study | Fam-<br>ily size<br>of<br>stud-<br>ied family | Aver-<br>age<br>size of<br>family<br>living | Average value of goods and serv-<br>ices furnished by the farm |                  |                  |                   | Average expenditures for goods and services<br>purchased |               |                                    |                            |                  | Average<br>savings |                        |                  |                  |                  |
|--|------|---------------|---|---|--|------------------|------------------|-------------------|--|---------------|------------------------------------|----------------------------|------------------|--------------------|------------------------|------------------|------------------|------------------|
|  |      |               |   |   | Food   | Hous-<br>ing     | Other            | Total             | Food   | Cloth-<br>ing | House-<br>hold<br>opera-<br>tion 3 | Trans-<br>por-<br>tation 3 | Other            | Total              | Life<br>insur-<br>ance | Other            |                  |                  |
|  |      |               |   |   |  |                  |                  |                   |  |               |                                    |                            |                  |                    |                        |                  | Dollars          | Dollars          |
| New York: Chautauque, Niagara,<br>Yates          | 1S   | 1928-29       | 240   | 3.4   | ( <sup>4</sup> )   | ( <sup>4</sup> ) | ( <sup>4</sup> ) | ( <sup>4</sup> )  | Dollars  | Dollars       | Dollars                            | Dollars                    | Dollars          | Dollars            | Dollars                | Dollars          | Dollars          | Dollars          |
| Ohio: scattered counties                         | 1R   | 1933          | 70  | 4.1   | ( <sup>4</sup> )   | 6 143            | ( <sup>4</sup> ) | 6 14              | ( <sup>4</sup> )   | 317           | 183                                | 109                        | 927              | 318                | 563                    | ( <sup>4</sup> ) | 7 81             | ( <sup>4</sup> ) |
| Illinois: scattered counties                     | 1R   | 1933-34       | 167   | 3.7   | 1,385  | 9 309            | 16 229           | 9 20              | 558  | 144           | 101                                | 100                        | 679              | 233                | 249                    | 113              | 35               | ( <sup>4</sup> ) |
| Minnesota:                                       |      |               |   |   |  |                  |                  |                   |  |               |                                    |                            |                  |                    |                        |                  |                  |                  |
| 8 southeastern counties                          | 2R   | 1933          | 68  | 3.8   | 979  | 13 106           | 13 138           | 13 35             | 339  | 200           | 86                                 | 65                         | 11 50            | 175                | 576                    | ( <sup>4</sup> ) | 7 64             | ( <sup>4</sup> ) |
| 7 northern counties                              | 1R   | 1933-34       | 27  | 3.5   | 757  | 13 155           | 13 93            | 13 35             | 283  | 180           | 65                                 | 32                         | 11 36            | 104                | 417                    | ( <sup>4</sup> ) | 7 57             | ( <sup>4</sup> ) |
| Iowa: east-central and north-central<br>sections | 1R   | 1933          | 17  | ( <sup>4</sup> )                            | ( <sup>4</sup> )   | 6 13 202         | ( <sup>4</sup> ) | ( <sup>12</sup> ) | ( <sup>4</sup> )   | 125           | 76                                 | 61                         | 11 88            | 250                | 600                    | 119              | 18               | ( <sup>4</sup> ) |
| Nebraska: scattered counties                     | 1R   | 1933          | 164   | 4.0   | 908  | 6 149            | 14 159           | 6 23              | 331  | 131           | 93                                 | 39                         | 53               | 125                | 491                    | ( <sup>4</sup> ) | 7 80             | ( <sup>4</sup> ) |
| South Carolina: 6 counties                       | 1R   | 1932-33       | 15 46   | 4.5   | 958  | 9 254            | 16 161           | 9 28              | 473  | 99            | 75                                 | 64                         | ( <sup>4</sup> ) | 204                | 442                    | 34               | 9                | ( <sup>4</sup> ) |
| Georgia:   |      |               |   |   |  |                  |                  |                   |  |               |                                    |                            |                  |                    |                        |                  |                  |                  |
| Southern Piedmont section                        | 1S   | 1931          | 17 98   | 4.0   | 18 874   | 6 375            | 16 99            | 6 57              | 531  | 78            | 47                                 | 43                         | 11 15            | 130                | 313                    | 19 30            | ( <sup>4</sup> ) | ( <sup>4</sup> ) |
| Do.  | 1S   | 1932          | 17 98   | 4.0   | 18 712   | 6 296            | 16 100           | 6 40              | 436  | 67            | 36                                 | 34                         | 11 16            | 97                 | 250                    | 19 26            | ( <sup>4</sup> ) | ( <sup>4</sup> ) |
| Oklahoma: Allalee, Kingfisher, Lo-<br>gan        | 1S   | 1932-33       | 562   | ( <sup>4</sup> )                            | ( <sup>4</sup> )   | ( <sup>4</sup> ) | ( <sup>4</sup> ) | ( <sup>4</sup> )  | ( <sup>4</sup> )   | 139           | 69                                 | 32                         | 11 75            | 109                | 424                    | ( <sup>4</sup> ) | 7 186            | ( <sup>4</sup> ) |
| Washington: scattered counties                   | 1R   | 1933          | 106   | 4.2   | ( <sup>4</sup> )   | 6 289            | ( <sup>4</sup> ) | 6 24              | ( <sup>4</sup> )   | 178           | 98                                 | 84                         | 11 86            | 298                | 744                    | ( <sup>4</sup> ) | 7 126            | ( <sup>4</sup> ) |

<sup>1</sup> This table is a supplement to table 475, 1933 Yearbook, and to table 484, 1934 Yearbook, and includes data from recent studies and other studies not available at the time of publication of the 1933 and 1934 Yearbooks.

<sup>2</sup> This number indicates the agency which obtained the data, and the letters indicate the method used in obtaining the data, as follows: 1, State university, agricultural college, or agricultural experiment station; 2, State university in cooperation with Bureau of Agricultural Economics, U. S. Department of Agriculture; 3, schedule method; R, record or account book method.

<sup>3</sup> Includes expenditures for fuel, light, household supplies, and hired help; in some cases includes also those for laundry done outside, telephone, postage, express and freight, insurance on furniture, dry-cleaning and pressing, moving charges, interest on family debts, tax, and water.

<sup>4</sup> Not included in this report.

<sup>5</sup> Not given separately.

<sup>6</sup> Evaluated at farm prices.

<sup>7</sup> Life insurance included with other savings.

<sup>8</sup> Size of family in adult-equivalent units.

<sup>9</sup> Evaluated at retail prices.

<sup>10</sup> Evaluated at 10 percent of estimated value of house.

<sup>11</sup> Schedules from identical families for consecutive years.

<sup>12</sup> Includes life insurance but no other savings.

<sup>13</sup> Includes health insurance.

<sup>14</sup> Basis of valuation not given.

<sup>15</sup> Value of fuel furnished included with value of food furnished.

<sup>16</sup> Evaluated at 9 percent of estimated value of house.

<sup>17</sup> Includes 1 family not operating a farm.

<sup>18</sup> Evaluated at 10 percent of estimated value of house.

<sup>19</sup> Schedules from identical families for consecutive years.

<sup>20</sup> Includes life insurance but no other savings.

Bureau of Home Economics.

TABLE 485.—*Preliminary summary of results of the 1934 cotton production-adjustment program of the Agricultural Adjustment Administration, by States*

[Statement as of Jan. 11, 1935]

| State               | Contracts | Ad-justed average base acreage | Ad-justed average production | Rented acres | Average yield on ad-justed con-tracts | Farm allot-ments | Esti-mated rental pay-ments | Esti-mated parity pay-ments | Esti-mated total pay-ments |
|---------------------|-----------|--------------------------------|------------------------------|--------------|---------------------------------------|------------------|-----------------------------|-----------------------------|----------------------------|
|                     | Number    | Acres                          | 1,000 pounds                 | Acres        | Pounds                                | 1,000 pounds     | Dollars                     | Dollars                     | Dollars                    |
| Alabama.....        | 126,048   | 3,282,610                      | 588,657                      | 1,288,103    | 179                                   | 234,663          | 8,069,965                   | 2,348,630                   | 10,416,595                 |
| Arizona.....        | 1,845     | 158,025                        | 55,011                       | 62,843       | 348                                   | 22,004           | 765,428                     | 220,040                     | 985,468                    |
| Arkansas.....       | 91,645    | 3,882,045                      | 651,408                      | 1,313,785    | 198                                   | 260,563          | 8,874,618                   | 2,605,630                   | 11,480,248                 |
| California.....     | 1,865     | 161,012                        | 77,413                       | 61,760       | 481                                   | 30,965           | 1,039,730                   | 309,650                     | 1,349,380                  |
| Florida.....        | 6,512     | 109,838                        | 16,005                       | 43,280       | 146                                   | 6,402            | 221,161                     | 64,020                      | 285,181                    |
| Georgia.....        | 107,064   | 3,108,866                      | 572,040                      | 1,199,524    | 184                                   | 228,616          | 7,724,935                   | 2,288,160                   | 10,013,095                 |
| Kansas.....         | 20        | 815                            | 116                          | 320          | 142                                   | 46               | 1,590                       | 460                         | 2,050                      |
| Kentucky.....       | 292       | 13,754                         | 3,757                        | 5,248        | 273                                   | 1,508            | 50,145                      | 15,030                      | 65,175                     |
| Louisiana.....      | 56,343    | 1,877,342                      | 360,962                      | 727,831      | 192                                   | 144,385          | 4,891,024                   | 1,443,850                   | 6,334,874                  |
| Mississippi.....    | 95,577    | 3,883,099                      | 737,062                      | 1,471,131    | 190                                   | 294,825          | 9,783,021                   | 2,948,250                   | 12,731,271                 |
| Missouri.....       | 8,792     | 379,819                        | 110,971                      | 145,712      | 292                                   | 44,388           | 1,489,177                   | 443,880                     | 1,933,057                  |
| New Mexico.....     | 2,156     | 120,234                        | 43,292                       | 44,175       | 360                                   | 17,317           | 556,605                     | 173,170                     | 729,775                    |
| North Carolina..... | 70,681    | 1,311,106                      | 327,492                      | 501,117      | 250                                   | 130,997          | 4,394,774                   | 1,309,970                   | 5,694,744                  |
| Oklahoma.....       | 89,113    | 3,300,561                      | 487,276                      | 1,277,140    | 148                                   | 194,910          | 6,615,585                   | 1,949,100                   | 8,564,685                  |
| South Carolina..... | 71,526    | 1,879,917                      | 402,739                      | 712,585      | 214                                   | 161,096          | 5,337,262                   | 1,610,960                   | 6,948,222                  |
| Tennessee.....      | 39,182    | 1,022,153                      | 218,717                      | 392,237      | 214                                   | 87,487           | 2,937,855                   | 874,870                     | 3,812,725                  |
| Texas.....          | 236,391   | 14,191,396                     | 2,041,940                    | 5,333,019    | 144                                   | 816,778          | 26,878,416                  | 8,167,780                   | 35,046,176                 |
| Virginia.....       | 4,541     | 60,640                         | 16,727                       | 23,472       | 276                                   | 6,691            | 226,740                     | 66,910                      | 293,650                    |
| Total.....          | 1,009,583 | 35,242,732                     | 6,709,585                    | 14,603,282   | 175                                   | 2,683,834        | 89,848,031                  | 26,838,340                  | 116,686,371                |

Agricultural Adjustment Administration.

Data on contracts as approved by State boards of review; compiled from forms No. 13-A. Information on payments estimated from contract data; rental at the rate of 3½ cents per pound on lint which would have been produced on rented land, partly payment at the rate of 1 cent per pound on 40 percent of average base production (approximately the portion grown for domestic consumption). All totals shown may be reduced to some extent by contract cancellations.

TABLE 486.—*State quotas of tax-exempt cotton under provisions of the Bankhead Act, 1934, administered by the Agricultural Adjustment Administration*

| State  | 5-year average pro-duction, 1928-32 |                   | Allotment in terms of net lint | Allotment in 478-pound net-weight bales | Official esti-mated production, 1934 | Allotments in excess of pro-duction | Production in excess of allotment |
|--|-------------------------------------|-------------------|--------------------------------|---|--------------------------------------|-------------------------------------|-----------------------------------|
|  | 478-pound net-weight bales          | Net lint          |                                |   |                                      |                                     |                                   |
| Virginia.....                                | Bales 45,000                        | Pounds 21,598,000 | Pounds 15,211,200              | Bales 31,823                            | Bales 39,000                         | -----                               | Bales 7,177                       |
| North Carolina.....                          | 752,000                             | 358,857,000       | 252,715,200                    | 528,693                                 | 650,000                              | -----                               | 121,307                           |
| South Carolina.....                          | 886,000                             | 408,763,000       | 287,856,000                    | 602,209                                 | 695,000                              | -----                               | 92,791                            |
| Georgia.....                                 | 1,242,000                           | 593,688,000       | 418,084,800                    | 874,654                                 | 995,000                              | -----                               | 120,346                           |
| Florida.....                                 | 35,000                              | 16,757,000        | 11,798,400                     | 24,683                                  | 28,000                               | -----                               | 3,317                             |
| Illinois.....                                | -----                               | -----             | 328,500                        | 687                                     | -----                                | -----                               | -----                             |
| Kansas.....                                  | 11,000                              | 5,061,000         | 180,500                        | 378                                     | 17,000                               | -----                               | 9,539                             |
| Kentucky.....                                | -----                               | -----             | 3,057,400                      | 6,395                                   | -----                                | -----                               | -----                             |
| Tennessee.....                               | 478,000                             | 228,827,000       | 161,145,600                    | 337,125                                 | 412,000                              | -----                               | 74,875                            |
| Alabama.....                                 | 1,255,000                           | 600,290,000       | 422,731,200                    | 884,375                                 | 965,000                              | -----                               | 80,625                            |
| Mississippi.....                             | 1,559,000                           | 745,781,000       | 525,192,000                    | 1,038,728                               | 1,145,000                            | -----                               | 46,272                            |
| Louisiana.....                               | 745,000                             | 356,376,000       | 250,963,200                    | 528,028                                 | 488,000                              | -----                               | 37,028                            |
| Oklahoma.....                                | 4,550,000                           | 2,197,538,000     | 1,547,539,200                  | 3,237,830                               | 2,395,000                            | -----                               | 842,530                           |
| Arkansas.....                                | 1,109,000                           | 531,223,000       | 374,097,600                    | 782,631                                 | 325,000                              | -----                               | 457,631                           |
| New Mexico.....                              | 1,351,000                           | 646,643,000       | 455,376,000                    | 952,669                                 | 875,000                              | -----                               | 77,669                            |
| Arizona.....                                 | 80,000                              | 43,224,000        | 30,449,400                     | 65,695                                  | 92,000                               | -----                               | 28,305                            |
| California.....                              | 128,000                             | 61,454,000        | 43,276,800                     | 90,537                                  | 110,000                              | -----                               | 3,463                             |
| Total excluding California and Missouri..... | 14,236,000                          | 6,816,095,000     | 4,800,000,000                  | 10,041,841                              | 9,231,000                            | -----                               | 75,795                            |
| California <sup>1</sup> .....                | -----                               | -----             | 100,000,000                    | 209,205                                 | 255,000                              | -----                               | 45,795                            |
| Missouri <sup>2</sup> .....                  | -----                               | -----             | 100,000,000                    | 209,205                                 | 245,000                              | -----                               | 35,795                            |
| Grand total.....                             | -----                               | -----             | 5,000,000,000                  | 10,460,251                              | 9,731,000                            | 41,414,858                          | 669,607                           |

<sup>1</sup> Including 16,000 bales of Pima cotton which is tax free when at least 1½ inches in length and, therefore, requires no allotment.

<sup>2</sup> Section 5 (a) of the Bankhead Cotton Act of 1934 provides "That no State shall receive an allotment of less than 200,000 bales of cotton in any 1 year of 5 years prior to this date the production of the State equaled 200,000 bales." This provision was found to apply to California and Missouri only.

<sup>3</sup> In the Bankhead Cotton Act of 1934 the term "bale" means 500 pounds of lint cotton. Since ordinarily bales contain an average of 478 pounds, allotments are shown as converted to 478-pound net-weight bales.

<sup>4</sup> Producers having excess tax-exemption certificates were able to utilize them extensively in some sections as a form of crop insurance, by selling them to producers whose production was in excess of their allotments. Those certificates not so transferred could be held and exchanged for 1935 tax-exemption certificates in addition to the normal allotments of the owners.

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TABLE 487.—*Tobacco adjustment programs under the Agricultural Adjustment Administration, by kinds of tobacco and by States, 1934*

| Kind of tobacco and State           | Total contracts | Total base acreage | Total base production | Average base acreage per contract | Average reduction from base <sup>1</sup> |
|-------------------------------------|-----------------|--------------------|-----------------------|-----------------------------------|--|
| <b>Flue-cured, types 11-14:</b>     | <i>Number</i>   | <i>Acres</i>       | <i>1,000 lbs.</i>     | <i>Acres</i>                      | <i>Percent</i>                           |
| Florida.....                        | 1,033           | 6,023              | 4,534                 | 5.80                              | 29                                       |
| Georgia.....                        | 12,381          | 75,870             | 59,821                | 6.13                              | 29                                       |
| North Carolina.....                 | 73,531          | 695,852            | 528,658               | 9.46                              | 28                                       |
| South Carolina.....                 | 13,291          | 99,380             | 78,542                | 7.48                              | 29                                       |
| Virginia.....                       | 11,684          | 94,328             | 59,747                | 8.07                              | 26                                       |
| Total.....                          | 111,925         | 971,453            | 731,302               | 8.68                              | 28                                       |
| <b>Fire-cured, types 21-24:</b>     |                 |                    |                       |                                   |  |
| Kentucky.....                       | 10,478          | 65,136             | 46,804                | 6.22                              | 25                                       |
| Tennessee.....                      | 6,963           | 65,007             | 50,968                | 9.34                              | 25                                       |
| Virginia.....                       | 6,308           | 28,302             | 20,432                | 4.49                              | 25                                       |
| Total.....                          | 23,749          | 158,445            | 118,204               | 6.67                              | 25                                       |
| <b>Burley, type 31:</b>             |                 |                    |                       |                                   |  |
| Alabama.....                        | 18              | 205                | 153                   | 11.40                             | 49                                       |
| Arkansas.....                       | 16              | 60                 | 28                    | 3.58                              | 45                                       |
| Indiana.....                        | 2,995           | 10,110             | 7,645                 | 3.37                              | 42                                       |
| Kansas.....                         | 88              | 480                | 425                   | 5.46                              | 41                                       |
| Kentucky.....                       | 59,832          | 305,590            | 228,199               | 5.11                              | 40                                       |
| Missouri.....                       | 1,059           | 7,810              | 7,092                 | 6.91                              | 40                                       |
| North Carolina.....                 | 3,969           | 7,810              | 5,950                 | 1.84                              | 35                                       |
| Ohio.....                           | 5,329           | 15,860             | 11,535                | 2.98                              | 42                                       |
| Tennessee.....                      | 28,449          | 67,435             | 53,737                | 2.37                              | 38                                       |
| Virginia.....                       | 5,793           | 10,720             | 10,144                | 1.85                              | 35                                       |
| West Virginia.....                  | 1,876           | 5,210              | 3,044                 | 2.78                              | 45                                       |
| Total.....                          | 109,424         | 430,290            | 327,955               | 3.93                              | 40                                       |
| <b>Maryland, type 32.....</b>       | 702             | 7,139              | 4,578                 | 10.17                             | 25                                       |
| <b>Dark air-cured, types 35-37:</b> |                 |                    |                       |                                   |  |
| Kentucky.....                       | 8,668           | 40,676             | 33,868                | 4.69                              | 30                                       |
| Tennessee.....                      | 1,034           | 2,746              | 2,100                 | 2.66                              | 30                                       |
| Virginia.....                       | 376             | 1,102              | 819                   | 2.93                              | 30                                       |
| Total.....                          | 10,078          | 44,524             | 36,787                | 4.42                              | 30                                       |
| <b>Cigar-leaf: <sup>2</sup></b>     |                 |                    |                       |                                   |  |
| Pennsylvania.....                   | 4,696           | 31,188             | ( <sup>3</sup> )      | 6.64                              | 67                                       |
| New York.....                       | 375             | 1,484              | ( <sup>3</sup> )      | 3.96                              | 90                                       |
| Ohio.....                           | 5,087           | 34,906             | ( <sup>3</sup> )      | 6.89                              | 68                                       |
| Indiana.....                        | 34              | 133                | ( <sup>3</sup> )      | 3.91                              | 78                                       |
| Connecticut.....                    | 2,158           | 17,352             | ( <sup>3</sup> )      | 8.04                              | 67                                       |
| Massachusetts.....                  | 1,049           | 7,346              | ( <sup>3</sup> )      | 7.00                              | 70                                       |
| Vermont.....                        | 25              | 132                | ( <sup>3</sup> )      | 5.28                              | 98                                       |
| New Hampshire.....                  | 27              | 124                | ( <sup>3</sup> )      | 4.59                              | 92                                       |
| Wisconsin.....                      | 8,558           | 38,190             | ( <sup>3</sup> )      | 4.46                              | 85                                       |
| Minnesota.....                      | 662             | 1,869              | ( <sup>3</sup> )      | 2.82                              | 91                                       |
| Illinois.....                       | 12              | 38                 | ( <sup>3</sup> )      | 3.18                              | 80                                       |
| Florida.....                        | 122             | 1,994              | ( <sup>3</sup> )      | 18.34                             | 27                                       |
| Georgia.....                        | 43              | 746                | ( <sup>3</sup> )      | 17.35                             | 27                                       |
| Total.....                          | 22,828          | 135,502            | ( <sup>3</sup> )      | 5.94                              | 72                                       |
| <b>Puerto Rican.....</b>            | 10,400          | 53,555             | ( <sup>3</sup> )      | 5.15                              | 32                                       |
| <b>Total all programs.....</b>      | 289,106         | 1,800,908          | -----                 | 6.23                              | 34                                       |

<sup>1</sup> Tobacco contracts provide allotments of production as well as acreage, except in the case of cigar-leaf tobacco. This column shows percentage reduction of allotted acreage from base acreage. Since some growers did not grow their full allotted acreage, the total harvested acreage of growers under contract was below the total acreage allotted. The Burley contract permitted choice of a reduction of either 33½ or 50 percent; binder and filler cigar-leaf contracts permitted choice of a reduction of 33½ or 50 percent or 100 percent. For flue-cured tobacco, an administrative ruling permitted choice of a reduction of 20 percent in lieu of the 30 percent provided in the contract.

<sup>2</sup> Includes all domestic types of cigar-leaf tobacco except types 45 and 61.

<sup>3</sup> Base production not established under cigar-leaf tobacco contracts.

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For production in 1934, see statistical tables in earlier portion of this Yearbook, under "Tobacco."

TABLE 488.—*Tobacco, 1934 crop: Proportion of sales to Feb. 1, 1935, covered by tax-payment warrants and tax paid in cash under Kerr-Smith Act*

| Class and type                    | Type No. | Total sales  | Percentage of sales for which tax was paid with warrants | Percentage of sales for which tax was paid in cash |
|-----------------------------------|----------|--------------|--|--|
| Flue-cured:                       |          | 1,000 pounds | Percent  | Percent  |
| Old belt.....                     | 11       | 192,267      | 96.1   | 3.9  |
| Eastern North Carolina.....       | 12       | 226,263      | 98.9   | 1.1  |
| South Carolina belt.....          | 13       | 102,856      | 99.2   | .8   |
| Georgia and Florida.....          | 14       | 35,001       | 99.5   | .5   |
| Total.....                        | 11-14    | 556,387      | 98.0   | 2.0  |
| Fire-cured:                       |          |              |  |  |
| Virginia.....                     | 21       | 12,422       | 87.0   | 13.0   |
| Clarksville and Hopkinsville..... | 22       | 11,715       | 81.7   | 18.3   |
| Paducah.....                      | 23       | 11,088       | 82.2   | 17.8   |
| Henderson.....                    | 24       | 2,155        | 65.6   | 34.4   |
| Total.....                        | 21-24    | 37,380       | 82.7   | 17.3   |
| Burley.....                       | 31       | 212,822      | 79.7   | 20.3   |
| Dark air-cured:                   |          |              |  |  |
| One Sucker.....                   | 35       | 10,587       | 52.5   | 47.5   |
| Green River.....                  | 36       | 11,525       | 84.2   | 15.8   |
| Total.....                        | 35-36    | 22,112       | 69.0   | 31.0   |

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Maryland type 32, Virginia sun-cured type 37, and all cigar-leaf types were specifically exempted from the tax on the 1934 crop under the provisions of the Kerr-Smith Act.

TABLE 489.—*Tobacco referenda: Growers' vote on Kerr-Smith Act, December 1934*

| Class and type                          | Type No. | Acreage customarily engaged in production of tobacco | Percentage of land which was voted | Percentage of voted land which was voted in favor of tax for 1935 |
|---|----------|--|------------------------------------|---|
| <b>FLUE-CURED</b>                       |          |  |                                    |   |
| Virginia.....                           | 11       | Acres<br>89,400                                      | Percent<br>94.7                    | Percent<br>98.5   |
| North Carolina.....                     | 11       | 255,000  | 97.5                               | 99.0  |
| Total old belt.....                     | 11       | 344,400  | 96.8                               | 98.9  |
| Eastern North Carolina belt.....        | 12       | 336,300  | 98.2                               | 99.3  |
| North Carolina.....                     | 13       | 63,600   | 98.7                               | 99.7  |
| South Carolina.....                     | 13       | 101,200  | 91.5                               | 99.1  |
| Total South Carolina belt.....          | 13       | 164,800  | 94.3                               | 99.3  |
| Georgia.....                            | 14       | 77,900   | 91.0                               | 98.4  |
| Florida.....                            | 14       | 5,700  | 76.4                               | 97.8  |
| Total Georgia and Florida belt.....     | 14       | 83,600   | 90.1                               | 98.4  |
| Total flue-cured.....                   | 11-14    | 929,100  | 96.3                               | 99.1  |
| <b>FIRE-CURED</b>                       |          |  |                                    |   |
| Virginia.....                           | 21       | 32,200   | 91.7                               | 94.7  |
| Kentucky.....                           | 22       | 43,800   | 82.1                               | 93.9  |
| Tennessee.....                          | 22       | 68,200   | 76.2                               | 94.4  |
| Total Clarksville and Hopkinsville..... | 22       | 112,000  | 78.5                               | 94.1  |
| Kentucky.....                           | 23       | 33,700   | 78.9                               | 91.6  |
| Tennessee.....                          | 23       | 5,700  | 59.6                               | 51.2  |
| Total Paducah.....                      | 23       | 39,400   | 76.1                               | 87.0  |
| Henderson Stemming (Kentucky).....      | 24       | 4,800  | 57.1                               | 70.3  |
| Total fire-cured.....                   | 21-24    | 188,400  | 79.7                               | 92.6  |
| <b>BURLEY</b>                           |          |  |                                    |   |
| Ohio.....                               | 31       | 18,300   | 87.0                               | 93.1  |
| Indiana.....                            | 31       | 11,600   | 87.0                               | 90.0  |
| Missouri.....                           | 31       | 8,000  | 90.6                               | 92.2  |
| Kansas.....                             | 31       | 700  | 97.3                               | 96.4  |
| Virginia.....                           | 31       | 11,100   | 93.5                               | 95.7  |
| West Virginia.....                      | 31       | 6,000  | 90.5                               | 93.0  |
| North Carolina.....                     | 31       | 8,600  | 89.6                               | 96.9  |
| Kentucky.....                           | 31       | 352,100  | 91.0                               | 95.9  |
| Tennessee.....                          | 31       | 77,400   | 88.0                               | 96.6  |
| Total Burley.....                       | 31       | 493,800  | 90.3                               | 95.7  |
| <b>DARK AIR-CURED</b>                   |          |  |                                    |   |
| Indiana.....                            | 35       | 1,300  | 46.2                               | 84.0  |
| Kentucky.....                           | 35       | 19,600   | 89.6                               | 92.2  |
| Tennessee.....                          | 35       | 3,300  | 95.3                               | 82.0  |
| Total One Sucker.....                   | 35       | 24,200   | 87.6                               | 90.6  |
| Green River (Kentucky).....             | 36       | 30,600   | 82.0                               | 94.6  |
| Virginia sun-cured.....                 | 37       | 4,200  | 71.5                               | 89.0  |
| Total dark air-cured.....               | 35-37    | 59,000   | 83.8                               | 92.5  |
| Total above types.....                  |          | 1,670,300  | 92.2                               | 97.3  |

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All growers having an interest in the 1934 crop of tobacco of the above types were eligible to vote upon the question, "Do you favor a tax on the sale of.....tobacco for the crop year, beginning May 1, 1935, as provided in the Kerr-Smith Act?" Growers were required to state their 1934 acreage and votes were tabulated according to the acreage voted. If any person having an interest in the 1934 crop voted "No", the entire acreage in which that person had an interest was counted as "not favoring the tax", regardless of how other persons having an interest in the same land voted. Referenda for Maryland type 32 and cigar-leaf types had not been conducted at the time this table was prepared.



TABLE 490.—*Preliminary summary of results of wheat acreage-reduction campaign for 1934 and 1935 of the Agricultural Adjustment Administration, by States*

[Revised to Dec. 1, 1934]

| State                                   | Acreage   |  |                                 | Production  |   | Estimated amount of adjustment payments <sup>4</sup> |                |
|---|---|--|---------------------------------|---|---|--|----------------|
|   | Official seeded acreage, average 1930-32 <sup>1</sup> | Base acreage of contract signers, average 1930-32 <sup>1</sup> | Percent-age of official acreage | Official production, average 1928-32 <sup>1</sup> | Base production of contract signers, average 1928-32 <sup>3</sup> | 1933   | 1934           |
|   | <i>Acres</i>  | <i>Acres</i>   | <i>Percent</i>                  | <i>Bushels</i>                                    | <i>Bushels</i>  | <i>Dollars</i>                                       | <i>Dollars</i> |
| Alabama.....                            | 4, 000  |  |                                 | 34, 400   |   |  |                |
| Arizona.....                            | 28, 300   | 6, 182   | 22                              | 602, 400  | 140, 528  | 21, 000  | 22, 000        |
| Arkansas.....                           | 30, 000   | 1, 788   | 6                               | 247, 200  | 17, 811   | 3, 000   | 3, 000         |
| California.....                         | 677, 000  | 439, 102   | 65                              | 11, 046, 400                                      | 8, 116, 619   | 1, 106, 000  | 1, 280, 000    |
| Colorado.....                           | 1, 754, 700   | 1, 457, 239  | 83                              | 17, 111, 200                                      | 14, 240, 773  | 2, 142, 000  | 2, 227, 000    |
| Delaware.....                           | 94, 300   | 36, 730  | 39                              | 1, 799, 600                                       | 710, 759  | 110, 000   | 111, 000       |
| Georgia.....                            | 52, 000   | 3, 750   | 7                               | 510, 400  | 54, 878   | 8, 000   | 9, 000         |
| Idaho.....                              | 1, 142, 000   | 978, 019   | 86                              | 27, 028, 400                                      | 22, 512, 449  | 3, 389, 000  | 3, 531, 000    |
| Illinois.....                           | 1, 870, 700   | 998, 918   | 51                              | 32, 532, 400                                      | 17, 226, 250  | 2, 492, 000  | 2, 698, 000    |
| Indiana.....                            | 1, 652, 300   | 746, 759   | 45                              | 28, 522, 200                                      | 12, 761, 516  | 1, 882, 000  | 1, 999, 000    |
| Iowa.....                               | 369, 300  | 140, 090   | 38                              | 7, 445, 200                                       | 3, 224, 668   | 451, 000   | 504, 000       |
| Kansas.....                             | 13, 516, 000  | 12, 086, 527   | 89                              | 177, 431, 200                                     | 157, 812, 906   | 24, 398, 000   | 24, 759, 000   |
| Kentucky.....                           | 258, 700  | 138, 338   | 53                              | 3, 002, 000                                       | 1, 723, 470   | 249, 000   | 271, 000       |
| Maine.....                              | 2, 300  |  |                                 | 51, 400   |   |  |                |
| Maryland.....                           | 439, 300  | 289, 904   | 66                              | 8, 647, 800                                       | 5, 306, 718   | 796, 000   | 831, 000       |
| Michigan.....                           | 719, 000  | 245, 022   | 34                              | 15, 522, 600                                      | 5, 631, 944   | 828, 000   | 882, 000       |
| Minnesota.....                          | 1, 367, 700   | 844, 519   | 62                              | 20, 946, 200                                      | 12, 463, 549  | 1, 850, 000  | 1, 947, 000    |
| Mississippi.....                        |   |  |                                 | 2, 600  |   |  |                |
| Missouri.....                           | 1, 535, 700   | 696, 075   | 45                              | 20, 362, 400                                      | 10, 810, 269  | 1, 534, 000  | 1, 690, 000    |
| Montana.....                            | 4, 445, 700   | 4, 316, 828  | 94                              | 45, 167, 400                                      | 41, 922, 669  | 6, 331, 000  | 6, 597, 000    |
| Nebraska.....                           | 3, 674, 300   | 2, 639, 602  | 72                              | 56, 537, 600                                      | 40, 082, 362  | 5, 944, 000  | 6, 205, 000    |
| Nevada.....                             | 15, 000   | 8, 514   | 57                              | 377, 600  | 206, 677  | 30, 000  | 32, 000        |
| New Jersey.....                         | 51, 000   | 3, 562   | 7                               | 1, 165, 200                                       | 78, 450   | 11, 000  | 12, 000        |
| New Mexico.....                         | 479, 700  | 386, 571   | 81                              | 4, 145, 000                                       | 3, 295, 583   | 497, 000   | 520, 000       |
| New York.....                           | 219, 700  | 12, 365  | 6                               | 4, 411, 200                                       | 295, 700  | 44, 000  | 46, 000        |
| North Carolina.....                     | 333, 700  | 21, 755  | 7                               | 3, 653, 400                                       | 351, 257  | 53, 000  | 55, 000        |
| North Dakota.....                       | 10, 368, 000  | 9, 919, 175  | 94                              | 102, 903, 000                                     | 95, 624, 651  | 14, 677, 000   | 14, 974, 000   |
| Ohio.....                               | 1, 745, 300   | 613, 009   | 35                              | 30, 479, 800                                      | 11, 206, 137  | 1, 718, 000  | 1, 754, 000    |
| Oklahoma.....                           | 4, 532, 700   | 3, 524, 741  | 78                              | 55, 145, 200                                      | 44, 402, 802  | 6, 840, 000  | 6, 956, 000    |
| Oregon.....                             | 1, 027, 000   | 845, 937   | 82                              | 21, 205, 000                                      | 17, 274, 962  | 2, 662, 000  | 2, 734, 000    |
| Pennsylvania.....                       | 954, 700  | 89, 435  | 9                               | 17, 387, 200                                      | 1, 670, 918   | 254, 000   | 262, 000       |
| South Carolina.....                     | 57, 000   |  |                                 | 575, 200  |   |  |                |
| South Dakota.....                       | 3, 895, 300   | 3, 511, 345  | 90                              | 37, 631, 800                                      | 33, 559, 850  | 5, 127, 000  | 5, 266, 000    |
| Tennessee.....                          | 248, 700  | 70, 904  | 29                              | 2, 918, 200                                       | 876, 394  | 128, 000   | 137, 000       |
| Texas.....                              | 4, 346, 300   | 3, 674, 186  | 85                              | 41, 082, 600                                      | 35, 062, 679  | 5, 422, 000  | 5, 500, 000    |
| Utah.....                               | 272, 300  | 206, 420   | 76                              | 5, 553, 800                                       | 4, 396, 105   | 660, 000   | 687, 000       |
| Vermont.....                            | 600   |  |                                 | 13, 000   |   |  |                |
| Virginia.....                           | 600, 700  | 210, 241   | 35                              | 9, 220, 400                                       | 3, 639, 109   | 539, 000   | 570, 000       |
| Washington.....                         | 2, 471, 300   | 1, 937, 500  | 78                              | 42, 882, 200                                      | 37, 255, 007  | 5, 802, 000  | 5, 864, 000    |
| West Virginia.....                      | 113, 000  | 32, 058  | 28                              | 1, 642, 600                                       | 507, 766  | 76, 000  | 79, 000        |
| Wisconsin.....                          | 100, 700  | 13, 726  | 14                              | 1, 899, 000                                       | 264, 935  | 39, 000  | 41, 000        |
| Wyoming.....                            | 360, 300  | 244, 513   | 68                              | 3, 753, 000                                       | 2, 900, 832   | 407, 000   | 453, 000       |
| Not allocated to individual States..... |   |  |                                 |   |   |  | 92, 000        |
| Total.....                              | 65, 926, 300  | 51, 391, 347   | 78                              | 860, 570, 400                                     | 647, 629, 952   | 98, 600, 000   | 101, 600, 000  |

<sup>1</sup> Official estimates of the Bureau of Agricultural Economics.<sup>2</sup> Some counties and individuals in numerous counties used 4-year and 5-year bases, which are included in this figure.<sup>3</sup> Base production on contracts adjusted to the 5-year base, 1928-32.<sup>4</sup> Estimated payments at 29 cents per bushel on 54 percent of the base production.

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**TABLE 491.—Cane sugar, raw: Refiners' stocks, receipts, meltings and direct-consumption deliveries, 1934, compiled in the administration of the Jones-Costigan Act by the Agricultural Adjustment Administration**

| Source of supply                   | Jan. 1, 1934, stocks | Receipts <sup>1</sup> | Meltings          | Deliveries for direct consumption | Lost by fire, etc. | Dec. 31, 1934, stocks |
|------------------------------------|----------------------|-----------------------|-------------------|-----------------------------------|--------------------|-----------------------|
|                                    | <i>Short tons</i>    | <i>Short tons</i>     | <i>Short tons</i> | <i>Short tons</i>                 | <i>Short tons</i>  | <i>Short tons</i>     |
| Cuba.....                          | 82,080               | 1,489,842             | 1,280,182         | 7,128                             | 896                | 283,716               |
| Hawaii.....                        | 47,099               | 951,370               | 927,881           | 6,078                             | 1                  | 65,009                |
| Puerto Rico.....                   |                      | 723,417               | 717,055           | <sup>2</sup> 197                  | 17                 | 6,148                 |
| Philippine Islands.....            | 12,327               | 1,197,581             | 1,039,871         | <sup>2</sup> 8,517                | 8                  | 160,462               |
| Continental United States.....     | 33,469               | 171,381               | 184,780           | 220                               |                    | 19,870                |
| Virgin Islands.....                |                      | 5,065                 | 5,095             |                                   |                    |                       |
| Other areas.....                   | 2,812                | 24,977                | 27,223            | 12                                |                    | 554                   |
| Miscellaneous, sweepings, etc..... | 2                    | 800                   | 801               | 1                                 |                    |                       |
| Total.....                         | 177,789              | 4,564,413             | 4,182,368         | 17,153                            | 922                | 541,759               |

<sup>1</sup> Receipts are of sugar arriving in the ports of the United States, regardless of whether they have been imported (i. e., entered through the customs) or not.

<sup>2</sup> Includes small items which may not have gone directly into consumption.

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All figures are preliminary, and include all overquota raw sugars held by refiners. Data compiled from reports submitted by 16 companies representing 22 refiners. The table includes all refineries in the United States except 3 Louisiana refineries melting only Louisiana raw sugars, the aggregate output of which is relatively small.

**TABLE 492.—Sugar, refined cane and beet: Stocks, production, and distribution by United States refiners and processors, 1934, compiled in the administration of the Jones-Costigan Act by the Agricultural Adjustment Administration**

| Manufacturing agency       | Jan. 1, 1934, stocks | Production        | Deliveries             | Dec. 31, 1934, stocks |
|----------------------------|----------------------|-------------------|------------------------|-----------------------|
|                            | <i>Short tons</i>    | <i>Short tons</i> | <i>Short tons</i>      | <i>Short tons</i>     |
| Cane sugar refineries..... | 369,234              | 3,950,020         | <sup>1</sup> 4,016,284 | 302,970               |
| Beet sugar factories.....  | 1,341,404            | 1,178,173         | <sup>2</sup> 1,459,408 | 1,060,169             |
| Total.....                 | 1,710,638            | 5,128,193         | <sup>2</sup> 5,475,692 | 1,363,139             |

<sup>1</sup> Includes sales for export. The Department of Commerce reported exports of 136,481 tons of refined sugar during 1934.

<sup>2</sup> Larger than actual deliveries by a small quantity representing losses in transit, through reprocessing, etc. Includes delivery of 4,500 tons to the Federal Surplus Relief Corporation.

<sup>3</sup> Equivalent to 5,858,990 short tons of 96° raw sugar.

Agricultural Adjustment Administration.

All figures are preliminary and were compiled from reports submitted by refiners and processors. Cane sugar refined by 3 Louisiana refineries, the aggregate output of which is relatively small, is not included in this table.

**TABLE 493.—Sugar: Receipts for direct consumption from specified areas, 1934**

| Source of supply        | Quantity                       | Source of supply | Quantity                       |
|-------------------------|--------------------------------|------------------|--------------------------------|
|                         | <i>Short tons</i> <sup>1</sup> |                  | <i>Short tons</i> <sup>1</sup> |
| Hawaii.....             | 20,362                         | Cuba.....        | <sup>2</sup> 395,374           |
| Philippine Islands..... | 64,252                         |                  |                                |
| Puerto Rico.....        | 93,620                         | Total.....       | 573,648                        |

<sup>1</sup> Refined sugar equivalent.

<sup>2</sup> Quota sugar upon which duty has been paid.

Agricultural Adjustment Administration.

All figures are preliminary and were compiled in the administration of the Jones-Costigan Act.

TABLE 494.—*Preliminary summary of results of 1934 corn-hog adjustment program of the Agricultural Adjustment Administration, by States*

[Statement to Jan. 1, 1935]

| State and division    | Corn-hog contracts accepted for examination and audit | Contract signers' base corn acreage as adjusted, average 1932-33 | Acreage contracted | Contracted acreage as a percentage of contract signers' adjusted base acreage | Average appraised yield per acre on contracted acres as finally adjusted | Estimated amount of benefit payments for corn-acreage adjustment under 1934 contract | Contract signers' number (adjusted) of hogs produced average 1932-33 | Estimated amount of benefit payments for adjustment of hog production under 1934 contract |
|-----------------------|---|--|--------------------|---|--|--|--|---|
|                       | Number  | Acres  | Acres              | Percent   | Bushels  | Dollars  | Number   | Dollars   |
| Maine.....            | 7   | 30   |                    |   |  |  | 1,340  | 5,000   |
| New Hampshire.....    | 184   | 438  | 5                  | 1.1   | 60.0   | 90   | 11,669   | 43,800  |
| Vermont.....          | 545   | 2,270  |                    |   |  |  | 20,879   | 78,300  |
| Massachusetts.....    | 224   | 554  | 4                  | .8  | 36.0   | 43   | 126,212  | 473,300   |
| Rhode Island.....     | 10  | 15   |                    |   |  |  | 1,440  | 5,400   |
| Connecticut.....      | 92  | 433  | 20                 | 4.6   | 34.7   | 200  | 15,611   | 58,500  |
| New York.....         | 1,877   | 13,769   | 590                | 4.3   | 33.2   | 5,900  | 85,009   | 318,800   |
| New Jersey.....       | 307   | 4,674  | 1,115              | 23.9  | 40.6   | 18,600   | 105,384  | 395,900   |
| Pennsylvania.....     | 2,664   | 56,534   | 12,282             | 21.7  | 38.4   | 141,500  | 103,966  | 389,900   |
| North Atlantic.....   | 5,920   | 78,667   | 14,016             | 17.8  | 38.4   | 161,333  | 471,710  | 1,768,900   |
| Ohio.....             | 64,404  | 1,997,868  | 452,308            | 22.6  | 37.3   | 5,061,300  | 3,319,210  | 12,447,000  |
| Indiana.....          | 88,433  | 3,118,471  | 715,620            | 22.9  | 35.8   | 7,685,800  | 4,698,732  | 17,620,200  |
| Illinois.....         | 120,808   | 7,094,632  | 1,625,469          | 22.9  | 36.3   | 17,701,400   | 6,006,075  | 22,522,800  |
| Michigan.....         | 24,307  | 424,702  | 79,197             | 18.6  | 36.0   | 774,500  | 720,297  | 2,701,100   |
| Wisconsin.....        | 42,945  | 961,947  | 157,337            | 16.4  | 36.0   | 1,699,200  | 1,647,231  | 6,177,100   |
| E. North Central..... | 338,897   | 13,597,620   | 3,029,931          | 22.3  | 36.2   | 32,922,200   | 16,391,545   | 61,468,200  |
| Minnesota.....        | 79,574  | 3,586,534  | 802,455            | 22.4  | 31.7   | 7,631,300  | 3,625,619  | 13,596,100  |
| Iowa.....             | 173,565   | 10,576,079   | 2,472,720          | 23.4  | 38.6   | 28,634,100   | 12,067,815   | 45,254,300  |
| Missouri.....         | 107,998   | 4,313,855  | 1,080,114          | 25.0  | 25.5   | 8,262,900  | 4,577,179  | 17,164,400  |
| North Dakota.....     | 19,726  | 794,463  | 173,794            | 21.9  | 17.4   | 907,200  | 584,211  | 2,190,800   |
| South Dakota.....     | 59,164  | 4,109,333  | 1,045,045          | 25.4  | 17.0   | 5,329,700  | 2,357,207  | 8,839,500   |
| Nebraska.....         | 88,600  | 7,878,940  | 1,860,218          | 23.6  | 23.8   | 13,282,000   | 4,513,236  | 16,924,600  |
| Kansas.....           | 78,671  | 4,429,194  | 1,034,502          | 24.5  | 18.9   | 6,149,100  | 2,919,209  | 10,947,000  |
| W. North Central..... | 607,298   | 35,688,403   | 8,518,843          | 23.9  | 27.5   | 70,196,300   | 30,644,476   | 114,916,700   |
| Delaware.....         | 230   | 7,559  | 1,890              | 25.0  | 33.1   | 18,800   | 5,364  | 20,100  |
| Maryland.....         | 3,138   | 90,587   | 21,229             | 23.4  | 36.2   | 230,500  | 89,516   | 335,700   |
| Virginia.....         | 10,551  | 231,228  | 54,900             | 23.7  | 29.4   | 434,200  | 295,316  | 1,107,400   |
| West Virginia.....    | 4,189   | 44,669   | 10,324             | 22.9  | 34.9   | 108,100  | 64,514   | 241,900   |
| North Carolina.....   | 4,091   | 107,977  | 23,378             | 21.7  | 24.3   | 170,400  | 153,817  | 576,800   |
| South Carolina.....   | 1,644   | 94,165   | 22,218             | 23.6  | 16.8   | 108,600  | 79,268   | 297,300   |
| Georgia.....          | 565   | 43,329   | 9,592              | 22.1  | 11.1   | 31,900   | 39,416   | 147,800   |
| Florida.....          | 1,597   | 82,081   | 20,658             | 25.2  | 14.2   | 88,000   | 62,964   | 236,100   |
| S. Atlantic.....      | 23,955  | 702,225  | 164,189            | 23.4  | 25.2   | 1,240,500  | 790,175  | 2,963,100   |
| Kentucky.....         | 23,156  | 779,949  | 193,538            | 24.8  | 26.6   | 1,544,800  | 776,373  | 2,911,400   |
| Tennessee.....        | 23,610  | 716,832  | 179,103            | 25.0  | 24.9   | 1,337,900  | 610,396  | 2,289,000   |
| Alabama.....          | 2,833   | 123,543  | 28,219             | 22.8  | 13.2   | 111,700  | 96,694   | 362,600   |
| Mississippi.....      | 256   | 16,553   | 3,886              | 23.5  | 18.5   | 21,600   | 12,747   | 47,800  |
| Arkansas.....         | 11,034  | 200,056  | 45,424             | 22.7  | 20.7   | 282,000  | 247,221  | 927,100   |
| Louisiana.....        | 481   | 23,102   | 5,676              | 24.6  | 16.9   | 28,800   | 11,943   | 44,800  |
| Oklahoma.....         | 36,940  | 996,346  | 231,567            | 23.2  | 17.3   | 1,201,800  | 1,062,259  | 4,038,500   |
| Texas.....            | 32,002  | 828,996  | 207,410            | 25.2  | 18.2   | 1,132,500  | 997,265  | 3,739,700   |
| S. Central.....       | 130,312   | 3,679,777  | 894,873            | 24.3  | 21.1   | 5,661,100  | 3,834,898  | 14,380,900  |
| Montana.....          | 4,304   | 55,310   | 14,195             | 25.7  | 16.3   | 69,400   | 153,184  | 574,400   |
| Idaho.....            | 9,844   | 20,590   | 2,603              | 12.6  | 34.7   | 27,100   | 359,172  | 1,346,900   |
| Wyoming.....          | 3,067   | 168,597  | 41,574             | 25.4  | 14.3   | 178,400  | 74,993   | 281,200   |
| Colorado.....         | 13,120  | 1,159,943  | 309,900            | 26.7  | 12.2   | 1,134,200  | 421,042  | 1,578,900   |
| New Mexico.....       | 2,574   | 130,810  | 35,343             | 27.0  | 19.9   | 202,500  | 65,692   | 246,000   |
| Arizona.....          | 834   | 2,435  | 536                | 22.0  | 23.7   | 3,800  | 20,382   | 76,400  |
| Utah.....             | 2,732   | 3,466  | 343                | 9.9   | 25.0   | 2,800  | 61,771   | 231,600   |
| Nevada.....           | 234   | 437  | 115                | 25.2  | 56.8   | 2,000  | 16,833   | 63,300  |
| Washington.....       | 5,029   | 3,059  | 607                | 19.8  | 36.3   | 6,600  | 212,260  | 796,000   |
| Oregon.....           | 6,123   | 21,372   | 1,714              | 8.0   | 35.9   | 18,500   | 229,165  | 859,400   |
| California.....       | 4,781   | 6,776  | 1,209              | 20.9  | 34.2   | 12,400   | 571,827  | 2,144,400   |
| Western.....          | 51,912  | 1,566,815  | 408,139            | 26.0  | 18.5   | 1,657,500  | 2,186,271  | 8,198,500   |
| United States.....    | 1,155,294   | 55,313,507   | 13,029,996         | 23.6  | 28.6   | 111,838,833  | 54,319,075   | 203,696,300   |

Agricultural Adjustment Administration.

## MISCELLANEOUS AGRICULTURAL STATISTICS

TABLE 495.—Temperature: Normal<sup>1</sup> and 1934, by months, at selected points in the United States

| Station                  | January |      | February |      | March  |      | April  |      | May    |      | June   |      | July   |      | August |      | September |      | October |      | November |      | December |      | Annual |      |
|--------------------------|---------|------|----------|------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|-----------|------|---------|------|----------|------|----------|------|--------|------|
|                          | Normal  | 1934 | Normal   | 1934 | Normal | 1934 | Normal | 1934 | Normal | 1934 | Normal | 1934 | Normal | 1934 | Normal | 1934 | Normal    | 1934 | Normal  | 1934 | Normal   | 1934 | Normal   | 1934 |        |      |
| Greenville, Maine.....   | 12.2    | 10.3 | 13.2     | 4.6  | 24.9   | 27.2 | 36.5   | 39.4 | 49.6   | 52.4 | 59.0   | 68.4 | 65.0   | 64.0 | 62.2   | 59.6 | 52.4      | 50.2 | 44.9    | 41.1 | 31.3     | 34.6 | 18.6     | 14.2 | 39.2   | 38.4 |
| Burlington, Vt.....      | 18.8    | 16.4 | 19.4     | 4.6  | 29.7   | 27.2 | 43.3   | 46.5 | 56.8   | 56.5 | 65.7   | 65.4 | 65.0   | 64.0 | 67.9   | 67.3 | 65.7      | 64.6 | 53.9    | 44.8 | 36.3     | 30.3 | 17.4     | 14.2 | 42.9   | 42.0 |
| Boston, Mass.....        | 27.0    | 29.6 | 28.8     | 17.5 | 35.6   | 35.1 | 46.4   | 48.0 | 57.1   | 60.0 | 66.6   | 66.9 | 71.7   | 73.8 | 69.9   | 67.3 | 63.2      | 64.6 | 51.9    | 40.4 | 42.0     | 45.6 | 28.4     | 49.6 | 46.9   | 46.9 |
| Buffalo, N. Y.....       | 24.0    | 27.5 | 24.8     | 11.6 | 31.1   | 28.6 | 43.8   | 48.0 | 54.6   | 56.8 | 64.4   | 67.7 | 66.8   | 71.2 | 68.6   | 66.3 | 62.4      | 65.8 | 53.9    | 40.4 | 42.0     | 45.6 | 28.4     | 49.6 | 46.9   | 46.9 |
| Canton, N. J.....        | 30.5    | 34.2 | 30.7     | 18.5 | 37.7   | 36.5 | 51.2   | 50.4 | 62.4   | 64.6 | 70.7   | 75.9 | 74.6   | 77.4 | 72.9   | 70.7 | 66.9      | 68.5 | 55.9    | 44.5 | 43.2     | 40.8 | 34.2     | 32.9 | 52.8   | 52.2 |
| Pittsburgh, Pa.....      | 30.7    | 33.8 | 32.3     | 19.7 | 39.6   | 36.5 | 51.2   | 50.4 | 62.4   | 64.6 | 70.7   | 75.9 | 74.6   | 77.4 | 72.9   | 70.7 | 66.9      | 68.5 | 55.9    | 44.5 | 43.2     | 40.8 | 34.2     | 32.9 | 52.8   | 52.2 |
| Spartanburg, S. C.....   | 20.3    | 36.0 | 27.3     | 15.4 | 35.7   | 34.6 | 45.1   | 43.8 | 59.4   | 62.0 | 67.8   | 71.3 | 75.1   | 82.2 | 73.6   | 70.0 | 67.1      | 69.8 | 55.7    | 43.6 | 42.5     | 45.6 | 30.7     | 29.1 | 49.4   | 40.4 |
| Cincinnati, Ohio.....    | 30.5    | 33.1 | 27.4     | 17.2 | 34.6   | 32.4 | 45.2   | 43.5 | 57.9   | 62.6 | 67.1   | 73.6 | 75.1   | 82.2 | 73.6   | 70.0 | 67.1      | 69.8 | 55.7    | 43.6 | 42.5     | 45.6 | 30.7     | 29.1 | 49.4   | 40.4 |
| Cleveland, Ohio.....     | 30.5    | 33.1 | 27.4     | 17.2 | 34.6   | 32.4 | 45.2   | 43.5 | 57.9   | 62.6 | 67.1   | 73.6 | 75.1   | 82.2 | 73.6   | 70.0 | 67.1      | 69.8 | 55.7    | 43.6 | 42.5     | 45.6 | 30.7     | 29.1 | 49.4   | 40.4 |
| Evansville, Ind.....     | 33.5    | 38.9 | 36.3     | 31.1 | 45.9   | 40.0 | 55.3   | 52.1 | 62.9   | 67.4 | 71.6   | 78.9 | 78.9   | 83.1 | 77.4   | 77.7 | 70.7      | 69.3 | 59.4    | 49.2 | 46.8     | 46.7 | 32.2     | 30.2 | 52.7   | 54.0 |
| Indianapolis, Ind.....   | 28.4    | 34.0 | 31.1     | 23.5 | 40.0   | 35.3 | 52.1   | 52.1 | 64.7   | 64.7 | 70.2   | 75.1 | 78.6   | 83.1 | 73.7   | 72.4 | 66.9      | 66.5 | 55.7    | 43.6 | 42.5     | 45.6 | 30.7     | 29.1 | 49.4   | 40.4 |
| Fort Wayne, Ind.....     | 26.1    | 32.0 | 28.5     | 18.7 | 36.6   | 31.8 | 46.9   | 48.6 | 57.5   | 65.2 | 69.3   | 71.6 | 72.5   | 74.4 | 71.6   | 72.0 | 65.3      | 64.8 | 53.5    | 40.4 | 40.4     | 45.8 | 20.9     | 20.6 | 50.3   | 51.1 |
| Chicago, Ill.....        | 23.1    | 31.7 | 25.9     | 23.8 | 37.0   | 34.1 | 50.9   | 51.4 | 61.7   | 65.7 | 70.9   | 70.9 | 72.5   | 81.0 | 72.5   | 74.4 | 64.3      | 63.8 | 52.0    | 40.3 | 40.3     | 45.8 | 20.9     | 20.6 | 50.3   | 51.1 |
| Peoria, Ill.....         | 23.1    | 31.7 | 25.9     | 23.8 | 37.0   | 34.1 | 50.9   | 51.4 | 61.7   | 65.7 | 70.9   | 70.9 | 72.5   | 81.0 | 72.5   | 74.4 | 64.3      | 63.8 | 52.0    | 40.3 | 40.3     | 45.8 | 20.9     | 20.6 | 50.3   | 51.1 |
| Grand Rapids, Mich.....  | 24.5    | 31.0 | 23.7     | 16.8 | 33.5   | 34.5 | 47.0   | 48.1 | 59.4   | 61.7 | 68.3   | 73.2 | 76.6   | 81.0 | 72.5   | 74.4 | 68.3      | 68.3 | 52.0    | 40.3 | 40.3     | 45.8 | 20.9     | 20.6 | 50.3   | 51.1 |
| Alpena, Mich.....        | 19.1    | 25.4 | 21.0     | 8.8  | 25.5   | 22.0 | 38.6   | 38.0 | 50.5   | 53.9 | 60.4   | 62.6 | 65.9   | 66.8 | 64.1   | 61.7 | 57.6      | 57.6 | 44.2    | 33.4 | 34.4     | 30.7 | 24.8     | 22.6 | 48.1   | 49.2 |
| Marquette, Mich.....     | 16.3    | 23.3 | 16.3     | 11.0 | 24.0   | 22.0 | 37.8   | 36.9 | 49.0   | 54.2 | 53.9   | 59.0 | 63.9   | 68.8 | 64.1   | 61.7 | 57.6      | 57.6 | 44.2    | 33.4 | 34.4     | 30.7 | 24.8     | 22.6 | 48.1   | 49.2 |
| Madison, Wis.....        | 16.7    | 26.6 | 19.1     | 13.5 | 30.8   | 26.4 | 42.1   | 45.4 | 58.8   | 65.7 | 65.7   | 72.1 | 72.1   | 75.3 | 69.8   | 69.8 | 60.4      | 60.4 | 48.5    | 48.5 | 48.5     | 48.5 | 22.3     | 21.9 | 44.1   | 41.0 |
| Green Bay, Wis.....      | 15.7    | 25.6 | 17.4     | 14.4 | 23.7   | 20.6 | 37.0   | 37.4 | 47.3   | 53.0 | 57.2   | 59.4 | 63.9   | 65.4 | 62.6   | 61.4 | 55.1      | 52.8 | 44.1    | 47.2 | 30.0     | 34.2 | 15.9     | 10.6 | 38.0   | 38.9 |
| Duluth, Minn.....        | 7.9     | 15.4 | 11.4     | 0.4  | 23.7   | 20.6 | 37.0   | 37.4 | 47.3   | 53.0 | 57.2   | 59.4 | 63.9   | 65.4 | 62.6   | 61.4 | 55.1      | 52.8 | 44.1    | 47.2 | 30.0     | 34.2 | 15.9     | 10.6 | 38.0   | 38.9 |
| Minneapolis, Minn.....   | 12.7    | 21.2 | 15.9     | 18.6 | 20.6   | 29.0 | 40.6   | 40.6 | 57.7   | 68.7 | 73.2   | 73.2 | 75.3   | 75.3 | 69.8   | 69.8 | 60.4      | 60.4 | 48.5    | 48.5 | 48.5     | 48.5 | 22.3     | 21.9 | 44.1   | 41.0 |
| Des Moines, Iowa.....    | 20.1    | 28.4 | 22.2     | 21.6 | 34.1   | 32.8 | 48.0   | 48.0 | 60.0   | 60.0 | 69.4   | 77.3 | 74.1   | 82.6 | 73.2   | 73.2 | 69.8      | 69.8 | 55.1    | 44.2 | 38.4     | 38.8 | 19.6     | 15.0 | 44.5   | 47.3 |
| Dubuque, Iowa.....       | 19.1    | 28.4 | 22.2     | 21.6 | 34.1   | 32.8 | 48.0   | 48.0 | 60.0   | 60.0 | 69.4   | 77.3 | 74.1   | 82.6 | 73.2   | 73.2 | 69.8      | 69.8 | 55.1    | 44.2 | 38.4     | 38.8 | 19.6     | 15.0 | 44.5   | 47.3 |
| St. Louis, Mo.....       | 31.1    | 37.8 | 34.8     | 31.4 | 44.1   | 40.8 | 56.1   | 56.1 | 64.4   | 64.4 | 70.8   | 74.1 | 81.6   | 85.4 | 76.7   | 71.7 | 64.0      | 61.9 | 51.9    | 40.4 | 40.4     | 40.4 | 21.4     | 14.8 | 50.8   | 50.8 |
| Springfield, Mo.....     | 27.6    | 34.0 | 32.3     | 32.3 | 42.2   | 40.6 | 54.3   | 56.8 | 64.5   | 64.5 | 70.8   | 74.1 | 81.6   | 85.4 | 76.7   | 71.7 | 64.0      | 61.9 | 51.9    | 40.4 | 40.4     | 40.4 | 21.4     | 14.8 | 50.8   | 50.8 |
| St. Joseph, Mo.....      | 23.5    | 37.8 | 35.2     | 35.1 | 45.2   | 42.2 | 56.0   | 58.5 | 64.5   | 64.5 | 70.8   | 74.1 | 81.6   | 85.4 | 76.7   | 71.7 | 64.0      | 61.9 | 51.9    | 40.4 | 40.4     | 40.4 | 21.4     | 14.8 | 50.8   | 50.8 |
| Bismarck, N. Dak.....    | 7.8     | 19.8 | 10.3     | 23.6 | 24.2   | 28.2 | 42.1   | 45.4 | 54.5   | 65.6 | 63.7   | 63.7 | 66.0   | 66.0 | 64.1   | 61.4 | 55.1      | 52.8 | 44.1    | 47.2 | 30.0     | 34.2 | 15.9     | 10.6 | 38.0   | 38.9 |
| Devils Lake, N. Dak..... | 1.8     | 19.8 | 10.3     | 23.6 | 24.2   | 28.2 | 42.1   | 45.4 | 54.5   | 65.6 | 63.7   | 63.7 | 66.0   | 66.0 | 64.1   | 61.4 | 55.1      | 52.8 | 44.1    | 47.2 | 30.0     | 34.2 | 15.9     | 10.6 | 38.0   | 38.9 |
| Pierre, S. Dak.....      | 16.0    | 28.7 | 18.6     | 30.0 | 31.8   | 34.2 | 46.8   | 50.8 | 58.0   | 68.7 | 63.7   | 63.7 | 66.0   | 66.0 | 64.1   | 61.4 | 55.1      | 52.8 | 44.1    | 47.2 | 30.0     | 34.2 | 15.9     | 10.6 | 38.0   | 38.9 |
| North Platte, Nebr.....  | 22.9    | 33.8 | 28.6     | 33.0 | 36.6   | 38.9 | 46.8   | 50.8 | 58.0   | 68.7 | 63.7   | 63.7 | 66.0   | 66.0 | 64.1   | 61.4 | 55.1      | 52.8 | 44.1    | 47.2 | 30.0     | 34.2 | 15.9     | 10.6 | 38.0   | 38.9 |
| Omaha, Nebr.....         | 21.0    | 34.0 | 26.5     | 30.0 | 37.4   | 41.0 | 45.1   | 53.2 | 57.1   | 63.2 | 72.0   | 76.7 | 85.4   | 74.4 | 73.6   | 68.3 | 68.3      | 52.0 | 40.1    | 40.1 | 45.8     | 20.9 | 20.6     | 50.3 | 51.1   |      |
| Concordia, Kans.....     | 24.0    | 34.0 | 29.8     | 33.6 | 41.0   | 41.0 | 53.5   | 57.1 | 63.2   | 72.0 | 76.7   | 85.4 | 74.4   | 73.6 | 68.3   | 68.3 | 52.0      | 40.1 | 40.1    | 40.1 | 45.8     | 20.9 | 20.6     | 50.3 | 51.1   |      |

<sup>1</sup> Normals are based on records of 30 or more years of observations. Normal and 1934 means based on mean of the daily temperature extremes.

TABLE 495

and 93. *y months, at*

S. Co

Station

| Station               | January |      | February |      | March  |      | April  |      | May    |      | June   |       | July   |       | August |       | September |      | October |      | November |      | December |      | Annual |
|-----------------------|---------|------|----------|------|--------|------|--------|------|--------|------|--------|-------|--------|-------|--------|-------|-----------|------|---------|------|----------|------|----------|------|--------|
|                       | Normal  | 1934 | Normal   | 1934 | Normal | 1934 | Normal | 1934 | Normal | 1934 | Normal | 1934  | Normal | 1934  | Normal | 1934  | Normal    | 1934 | Normal  | 1934 | Normal   | 1934 | Normal   | 1934 |        |
| Dodge City, Kans.     | 29.0    | 36.7 | 33.2     | 35.8 | 42.8   | 43.9 | 63.6   | 66.2 | 63.8   | 68.4 | 72.5   | 80.0  | 78.4   | 87.3  | 77.1   | 82.8  | 80.4      | 65.9 | 50.4    | 42.4 | 47.4     | 32.9 | 35.4     | 34.3 | 58.0   |
| Iola, Kans.           | 29.8    | 38.4 | 34.4     | 37.5 | 42.6   | 44.2 | 62.3   | 65.9 | 63.1   | 67.7 | 71.8   | 79.3  | 77.7   | 88.0  | 77.0   | 82.8  | 80.4      | 65.9 | 50.4    | 42.4 | 47.4     | 32.9 | 35.4     | 34.3 | 58.0   |
| Washington, D. C.     | 33.4    | 39.0 | 36.3     | 34.6 | 42.6   | 44.2 | 61.2   | 63.3 | 60.4   | 65.4 | 69.5   | 77.3  | 75.4   | 84.3  | 74.1   | 79.1  | 76.2      | 61.4 | 45.9    | 38.9 | 43.9     | 28.9 | 31.4     | 30.4 | 55.0   |
| Lynchburg, Va.        | 37.5    | 41.2 | 39.6     | 37.9 | 47.6   | 49.2 | 67.6   | 69.7 | 66.7   | 71.7 | 75.8   | 83.6  | 81.7   | 90.5  | 80.3   | 85.3  | 82.4      | 67.6 | 52.1    | 45.1 | 50.1     | 35.1 | 37.6     | 36.6 | 57.0   |
| Norfolk, Va.          | 37.5    | 41.2 | 39.6     | 37.9 | 47.6   | 49.2 | 67.6   | 69.7 | 66.7   | 71.7 | 75.8   | 83.6  | 81.7   | 90.5  | 80.3   | 85.3  | 82.4      | 67.6 | 52.1    | 45.1 | 50.1     | 35.1 | 37.6     | 36.6 | 57.0   |
| Farmington, W. Va.    | 32.9    | 37.4 | 34.2     | 32.6 | 43.8   | 45.4 | 63.4   | 65.5 | 62.6   | 67.6 | 71.7   | 79.4  | 77.5   | 86.3  | 76.1   | 81.1  | 78.2      | 63.4 | 47.9    | 40.9 | 45.9     | 30.9 | 33.4     | 32.4 | 56.0   |
| Union, Ky.            | 32.9    | 37.4 | 34.2     | 32.6 | 43.8   | 45.4 | 63.4   | 65.5 | 62.6   | 67.6 | 71.7   | 79.4  | 77.5   | 86.3  | 76.1   | 81.1  | 78.2      | 63.4 | 47.9    | 40.9 | 45.9     | 30.9 | 33.4     | 32.4 | 56.0   |
| Chattanooga, Tenn.    | 41.2    | 45.0 | 43.9     | 43.0 | 50.0   | 50.4 | 67.7   | 69.8 | 66.9   | 71.9 | 76.0   | 83.7  | 81.8   | 90.6  | 80.4   | 85.4  | 82.5      | 67.7 | 52.2    | 45.2 | 50.2     | 35.2 | 37.7     | 36.7 | 57.0   |
| Chattanooga, N. O.    | 40.8    | 44.2 | 43.3     | 42.4 | 49.4   | 49.8 | 66.8   | 68.9 | 66.0   | 71.0 | 75.1   | 82.8  | 80.9   | 89.7  | 79.5   | 84.5  | 81.6      | 66.8 | 51.3    | 44.3 | 49.3     | 34.3 | 36.8     | 35.8 | 56.0   |
| Greenville, S. O.     | 40.8    | 44.2 | 43.3     | 42.4 | 49.4   | 49.8 | 66.8   | 68.9 | 66.0   | 71.0 | 75.1   | 82.8  | 80.9   | 89.7  | 79.5   | 84.5  | 81.6      | 66.8 | 51.3    | 44.3 | 49.3     | 34.3 | 36.8     | 35.8 | 56.0   |
| Atlanta, Ga.          | 61.0    | 64.8 | 63.0     | 61.1 | 68.1   | 68.5 | 85.1   | 87.2 | 84.3   | 89.4 | 93.5   | 101.2 | 99.3   | 108.1 | 97.9   | 102.9 | 100.0     | 85.1 | 69.6    | 62.6 | 67.6     | 52.6 | 55.1     | 54.1 | 65.0   |
| Thomasville, Ga.      | 61.0    | 64.8 | 63.0     | 61.1 | 68.1   | 68.5 | 85.1   | 87.2 | 84.3   | 89.4 | 93.5   | 101.2 | 99.3   | 108.1 | 97.9   | 102.9 | 100.0     | 85.1 | 69.6    | 62.6 | 67.6     | 52.6 | 55.1     | 54.1 | 65.0   |
| Jacksonville, Fla.    | 55.4    | 59.2 | 56.3     | 54.4 | 61.4   | 61.8 | 78.0   | 80.1 | 77.1   | 82.1 | 86.2   | 93.9  | 92.0   | 100.7 | 90.5   | 95.5  | 92.6      | 77.7 | 62.2    | 55.2 | 60.2     | 45.2 | 47.7     | 46.7 | 57.0   |
| Sevensville, Fla.     | 55.4    | 59.2 | 56.3     | 54.4 | 61.4   | 61.8 | 78.0   | 80.1 | 77.1   | 82.1 | 86.2   | 93.9  | 92.0   | 100.7 | 90.5   | 95.5  | 92.6      | 77.7 | 62.2    | 55.2 | 60.2     | 45.2 | 47.7     | 46.7 | 57.0   |
| Miami, Fla.           | 60.9    | 64.6 | 61.7     | 59.7 | 66.7   | 67.1 | 83.9   | 86.0 | 83.0   | 88.0 | 92.1   | 100.0 | 98.1   | 106.9 | 96.7   | 101.7 | 98.8      | 83.9 | 68.4    | 61.4 | 66.4     | 51.4 | 53.9     | 52.9 | 63.0   |
| Memphis, Tenn.        | 40.9    | 44.2 | 43.3     | 42.4 | 49.4   | 49.8 | 66.8   | 68.9 | 66.0   | 71.0 | 75.1   | 82.8  | 80.9   | 89.7  | 79.5   | 84.5  | 81.6      | 66.8 | 51.3    | 44.3 | 49.3     | 34.3 | 36.8     | 35.8 | 56.0   |
| Nashville, Tenn.      | 40.9    | 44.2 | 43.3     | 42.4 | 49.4   | 49.8 | 66.8   | 68.9 | 66.0   | 71.0 | 75.1   | 82.8  | 80.9   | 89.7  | 79.5   | 84.5  | 81.6      | 66.8 | 51.3    | 44.3 | 49.3     | 34.3 | 36.8     | 35.8 | 56.0   |
| Birmingham, Ala.      | 45.1    | 48.6 | 46.7     | 44.8 | 51.8   | 52.2 | 68.8   | 70.9 | 68.0   | 73.0 | 77.1   | 84.8  | 82.9   | 91.6  | 81.4   | 86.4  | 83.5      | 68.6 | 53.1    | 46.1 | 51.1     | 36.1 | 38.6     | 37.6 | 48.0   |
| Mobile, Ala.          | 45.1    | 48.6 | 46.7     | 44.8 | 51.8   | 52.2 | 68.8   | 70.9 | 68.0   | 73.0 | 77.1   | 84.8  | 82.9   | 91.6  | 81.4   | 86.4  | 83.5      | 68.6 | 53.1    | 46.1 | 51.1     | 36.1 | 38.6     | 37.6 | 48.0   |
| Meridian, Miss.       | 47.0    | 50.8 | 48.9     | 47.0 | 54.0   | 54.4 | 70.6   | 72.7 | 69.7   | 74.7 | 78.8   | 86.5  | 84.6   | 93.4  | 83.2   | 88.2  | 85.3      | 70.4 | 54.9    | 47.9 | 52.9     | 37.9 | 40.4     | 39.4 | 50.0   |
| New Orleans, La.      | 48.2    | 51.9 | 50.0     | 48.1 | 55.1   | 55.5 | 71.7   | 73.8 | 70.8   | 75.8 | 79.9   | 87.6  | 85.7   | 94.4  | 84.2   | 89.2  | 86.3      | 71.4 | 55.9    | 48.9 | 53.9     | 38.9 | 41.4     | 40.4 | 51.0   |
| Stavopol, La.         | 47.0    | 50.8 | 48.9     | 47.0 | 54.0   | 54.4 | 70.6   | 72.7 | 69.7   | 74.7 | 78.8   | 86.5  | 84.6   | 93.4  | 83.2   | 88.2  | 85.3      | 70.4 | 54.9    | 47.9 | 52.9     | 37.9 | 40.4     | 39.4 | 50.0   |
| Amarillo, Tex.        | 35.3    | 41.0 | 38.1     | 42.4 | 48.3   | 48.7 | 65.0   | 67.1 | 64.1   | 69.1 | 73.2   | 80.9  | 79.0   | 87.7  | 77.5   | 82.5  | 79.6      | 64.7 | 49.2    | 42.2 | 47.2     | 32.2 | 34.7     | 33.7 | 44.0   |
| Brownsville, Tex.     | 40.8    | 44.2 | 43.3     | 42.4 | 49.4   | 49.8 | 66.8   | 68.9 | 66.0   | 71.0 | 75.1   | 82.8  | 80.9   | 89.7  | 79.5   | 84.5  | 81.6      | 66.8 | 51.3    | 44.3 | 49.3     | 34.3 | 36.8     | 35.8 | 56.0   |
| El Paso, Tex.         | 45.0    | 48.4 | 46.5     | 44.6 | 51.6   | 52.0 | 68.6   | 70.7 | 67.8   | 72.8 | 76.9   | 84.6  | 82.7   | 91.4  | 81.2   | 86.2  | 83.3      | 68.4 | 52.9    | 45.9 | 50.9     | 35.9 | 38.4     | 37.4 | 48.0   |
| Fort Worth, Tex.      | 45.0    | 48.4 | 46.5     | 44.6 | 51.6   | 52.0 | 68.6   | 70.7 | 67.8   | 72.8 | 76.9   | 84.6  | 82.7   | 91.4  | 81.2   | 86.2  | 83.3      | 68.4 | 52.9    | 45.9 | 50.9     | 35.9 | 38.4     | 37.4 | 48.0   |
| Galveston, Tex.       | 45.0    | 48.4 | 46.5     | 44.6 | 51.6   | 52.0 | 68.6   | 70.7 | 67.8   | 72.8 | 76.9   | 84.6  | 82.7   | 91.4  | 81.2   | 86.2  | 83.3      | 68.4 | 52.9    | 45.9 | 50.9     | 35.9 | 38.4     | 37.4 | 48.0   |
| San Antonio, Tex.     | 62.3    | 65.8 | 63.9     | 62.0 | 69.0   | 69.4 | 85.6   | 87.7 | 84.8   | 89.9 | 94.0   | 101.7 | 99.8   | 108.6 | 98.4   | 103.4 | 100.5     | 85.6 | 70.1    | 63.1 | 68.1     | 53.1 | 55.6     | 54.6 | 65.0   |
| Omaha, Neb.           | 32.3    | 37.0 | 34.1     | 32.2 | 43.2   | 43.6 | 60.2   | 62.3 | 59.4   | 64.4 | 68.5   | 76.2  | 74.3   | 83.1  | 72.9   | 77.9  | 75.0      | 60.1 | 44.6    | 37.6 | 42.6     | 27.6 | 30.1     | 29.1 | 40.0   |
| Chicago, Ill.         | 30.4    | 40.8 | 35.6     | 34.9 | 42.4   | 42.8 | 59.0   | 61.1 | 58.2   | 63.2 | 67.3   | 75.0  | 73.1   | 81.9  | 71.7   | 76.7  | 73.8      | 58.9 | 43.4    | 36.4 | 41.4     | 26.4 | 28.9     | 27.9 | 38.0   |
| Hayes, Mont.          | 12.9    | 27.7 | 13.8     | 12.9 | 20.9   | 21.0 | 37.5   | 39.6 | 36.7   | 41.7 | 45.8   | 53.5  | 51.6   | 60.4  | 50.2   | 55.2  | 52.3      | 37.4 | 21.9    | 14.9 | 19.9     | 4.9  | 7.4      | 6.4  | 17.0   |
| Butte, Mont.          | 12.9    | 27.7 | 13.8     | 12.9 | 20.9   | 21.0 | 37.5   | 39.6 | 36.7   | 41.7 | 45.8   | 53.5  | 51.6   | 60.4  | 50.2   | 55.2  | 52.3      | 37.4 | 21.9    | 14.9 | 19.9     | 4.9  | 7.4      | 6.4  | 17.0   |
| Miles City, Mont.     | 14.5    | 27.7 | 16.8     | 16.0 | 24.0   | 24.1 | 40.5   | 42.6 | 39.6   | 44.6 | 48.7   | 56.4  | 54.5   | 63.3  | 53.1   | 58.1  | 55.2      | 40.3 | 24.8    | 17.8 | 22.8     | 7.8  | 10.3     | 9.3  | 20.0   |
| Callegui, Mont.       | 20.4    | 24.0 | 22.1     | 20.2 | 27.2   | 27.3 | 43.8   | 45.9 | 43.0   | 48.0 | 52.1   | 59.8  | 57.9   | 66.7  | 56.5   | 61.5  | 58.6      | 43.7 | 28.2    | 21.2 | 26.2     | 11.2 | 13.7     | 12.7 | 23.0   |
| Chandler, Wyo.        | 25.5    | 29.0 | 27.1     | 25.2 | 32.2   | 32.3 | 48.7   | 50.8 | 47.9   | 52.9 | 57.0   | 64.7  | 62.8   | 71.6  | 61.4   | 66.4  | 63.5      | 48.6 | 33.1    | 26.1 | 31.1     | 16.1 | 18.6     | 17.6 | 28.0   |
| Shepherd, Wyo.        | 18.9    | 23.1 | 21.2     | 19.3 | 26.3   | 26.4 | 42.8   | 44.9 | 42.0   | 47.0 | 51.1   | 58.8  | 56.9   | 65.7  | 55.5   | 60.5  | 57.6      | 42.7 | 27.2    | 20.2 | 25.2     | 10.2 | 12.7     | 11.7 | 22.0   |
| Pueblo, Colo.         | 29.9    | 33.9 | 32.0     | 30.1 | 37.1   | 37.2 | 53.6   | 55.7 | 52.8   | 57.8 | 61.9   | 69.6  | 67.7   | 76.5  | 66.3   | 71.3  | 68.4      | 53.5 | 38.0    | 31.0 | 36.0     | 21.0 | 23.5     | 22.5 | 33.0   |
| Grand Junction, Colo. | 24.0    | 28.0 | 26.1     | 24.2 | 31.2   | 31.3 | 47.7   | 49.8 | 46.9   | 51.9 | 56.0   | 63.7  | 61.8   | 70.6  | 60.4   | 65.4  | 62.5      | 47.6 | 32.1    | 25.1 | 30.1     | 15.1 | 17.6     | 16.6 | 27.0   |
| Santa Fe, N. Mex.     | 28.8    | 32.6 | 30.7     | 28.8 | 35.8   | 35.9 | 52.4   | 54.5 | 51.6   | 56.6 | 60.7   | 68.4  | 66.5   | 75.3  | 65.1   | 70.1  | 67.2      | 52.3 | 36.8    | 29.8 | 34.8     | 19.8 | 22.3     | 21.3 | 32.0   |

|                           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Roswell, N. Mex.....      | 39.2 | 41.1 | 42.5 | 46.0 | 51.3 | 51.7 | 60.6 | 62.4 | 68.4 | 71.4 | 78.3 | 70.7 | 73.9 | 82.6 | 76.6 | 80.4 | 70.3 | 71.8 | 50.5 | 65.9 | 48.1 | 52.2 | 41.2 | 43.6 | 50.5 | 62.4 |
| Phoenix, Ariz.....        | 51.2 | 64.5 | 56.1 | 60.8 | 60.7 | 70.0 | 67.0 | 74.5 | 76.0 | 83.2 | 84.5 | 83.6 | 80.8 | 84.0 | 88.5 | 90.0 | 82.7 | 84.8 | 70.6 | 75.5 | 59.7 | 61.4 | 62.0 | 56.0 | 69.7 | 74.1 |
| Modena, Utah.....         | 26.7 | 32.2 | 31.0 | 38.2 | 38.2 | 46.8 | 46.0 | 52.2 | 53.5 | 66.2 | 63.5 | 61.9 | 70.9 | 73.6 | 69.2 | 77.8 | 64.4 | 61.2 | 48.0 | 51.9 | 38.4 | 41.0 | 28.1 | 31.0 | 47.6 | 51.9 |
| Salt Lake City, Utah..... | 23.0 | 35.0 | 38.8 | 43.0 | 41.7 | 50.6 | 46.0 | 58.0 | 57.4 | 66.2 | 67.4 | 68.4 | 70.9 | 73.7 | 74.5 | 77.8 | 64.4 | 63.6 | 52.5 | 56.2 | 41.1 | 44.2 | 31.9 | 33.2 | 51.6 | 56.5 |
| Winnemucca, Nev.....      | 23.6 | 36.6 | 33.5 | 40.2 | 40.0 | 48.0 | 46.0 | 54.2 | 53.9 | 61.7 | 62.8 | 62.4 | 70.6 | 73.8 | 69.8 | 73.6 | 59.2 | 50.8 | 48.3 | 51.8 | 38.4 | 42.4 | 30.0 | 33.0 | 48.4 | 53.2 |
| Boise, Idaho.....         | 23.8 | 39.8 | 34.8 | 44.2 | 42.7 | 50.6 | 50.4 | 57.6 | 57.1 | 66.3 | 65.3 | 65.9 | 72.9 | 74.8 | 71.1 | 74.6 | 61.6 | 61.4 | 51.4 | 54.4 | 41.0 | 46.6 | 29.1 | 32.9 | 50.9 | 55.8 |
| Seattle, Wash.....        | 39.6 | 45.6 | 41.1 | 48.7 | 44.9 | 52.0 | 48.4 | 66.4 | 54.5 | 68.8 | 68.9 | 62.2 | 63.1 | 65.2 | 72.1 | 66.2 | 53.1 | 50.5 | 55.4 | 55.2 | 45.6 | 50.0 | 41.7 | 44.0 | 51.0 | 55.2 |
| Walla Walla, Wash.....    | 32.7 | 43.7 | 37.1 | 43.0 | 40.1 | 53.4 | 53.1 | 60.4 | 58.6 | 64.0 | 64.0 | 63.0 | 67.4 | 67.2 | 72.7 | 73.8 | 63.8 | 64.0 | 53.5 | 56.4 | 42.8 | 48.9 | 35.5 | 39.3 | 53.1 | 57.8 |
| Portland, Oreg.....       | 39.4 | 46.9 | 42.1 | 46.4 | 40.9 | 55.2 | 51.8 | 69.5 | 56.9 | 61.4 | 62.4 | 64.0 | 67.4 | 67.5 | 68.0 | 69.0 | 61.7 | 62.8 | 54.9 | 57.4 | 46.9 | 50.3 | 41.3 | 44.1 | 53.4 | 57.7 |
| Roseburg, Oreg.....       | 41.2 | 47.2 | 43.4 | 46.7 | 47.1 | 56.6 | 51.0 | 68.7 | 62.0 | 61.6 | 62.5 | 63.6 | 67.4 | 67.5 | 68.0 | 69.0 | 61.7 | 62.8 | 54.9 | 57.4 | 46.9 | 50.3 | 41.3 | 44.1 | 53.4 | 57.7 |
| Eureka, Calif.....        | 46.9 | 50.8 | 47.2 | 52.0 | 48.3 | 54.2 | 46.9 | 63.6 | 62.0 | 60.3 | 64.5 | 73.2 | 82.1 | 81.5 | 80.1 | 77.4 | 73.4 | 73.4 | 63.6 | 55.2 | 51.1 | 54.0 | 48.2 | 44.1 | 53.4 | 57.7 |
| Fresno, Calif.....        | 44.2 | 46.0 | 51.1 | 54.4 | 65.0 | 63.8 | 60.2 | 67.6 | 67.1 | 71.3 | 73.8 | 73.2 | 82.1 | 81.5 | 80.1 | 77.4 | 73.4 | 73.4 | 63.6 | 55.2 | 51.1 | 54.0 | 48.2 | 44.1 | 53.4 | 57.7 |
| Los Angeles, Calif.....   | 50.6 | 60.4 | 55.5 | 66.5 | 57.5 | 65.5 | 66.4 | 64.9 | 62.2 | 67.5 | 68.4 | 65.2 | 70.2 | 72.5 | 71.1 | 69.3 | 73.4 | 73.4 | 63.6 | 55.2 | 51.1 | 54.0 | 48.2 | 44.1 | 53.4 | 57.7 |
| Sacramento, Calif.....    | 46.8 | 47.8 | 50.1 | 53.1 | 54.5 | 61.5 | 58.1 | 64.4 | 63.3 | 68.2 | 68.4 | 71.4 | 73.2 | 72.5 | 71.1 | 69.3 | 73.4 | 73.4 | 63.6 | 55.2 | 51.1 | 54.0 | 48.2 | 44.1 | 53.4 | 57.7 |
| San Diego, Calif.....     | 54.8 | 56.1 | 56.1 | 58.3 | 56.2 | 61.8 | 58.5 | 62.3 | 60.8 | 64.7 | 63.9 | 64.0 | 67.2 | 66.0 | 65.1 | 60.7 | 63.7 | 64.0 | 63.6 | 55.2 | 51.1 | 54.0 | 48.2 | 44.1 | 53.4 | 57.7 |
| San Francisco, Calif..... | 49.9 | 51.8 | 52.2 | 55.0 | 54.2 | 60.6 | 53.0 | 68.0 | 56.8 | 60.6 | 68.5 | 61.0 | 68.5 | 66.0 | 66.1 | 60.9 | 60.9 | 63.6 | 60.5 | 61.8 | 56.3 | 58.5 | 51.3 | 62.0 | 56.1 | 58.9 |

1 Normals are based on records of 30 or more years of observation. Normal and 1984 means based on mean of the daily temperature extremes.  
Weather Bureau.



# MISCELLANEOUS AGRICULTURAL STATISTICS

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|                       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Charleston, S. C.     | 3.02 | 1.80 | 2.08 | 3.07 | 3.02 | 1.18 | 2.53 | 1.72 | 3.00 | 5.   | 4.50 | 1.83 | 6.53 | 4.04 | 3.27 | 5.73 | 2.14 | 2.64 | 2.72 | 2.16 | 45.  | 22   | 35.  | 83.  |
| Greenville, S. C.     | 4.87 | 2.59 | 4.70 | 4.63 | 6.30 | 4.07 | 3.72 | 1.27 | 3.03 | 5.   | 4.50 | 1.83 | 6.53 | 4.04 | 3.27 | 5.73 | 2.14 | 2.64 | 2.72 | 2.16 | 45.  | 22   | 35.  | 83.  |
| Atlanta, Ga.          | 4.90 | 2.79 | 4.06 | 3.07 | 3.02 | 1.15 | 2.53 | 1.27 | 3.03 | 5.   | 4.50 | 1.83 | 6.53 | 4.04 | 3.27 | 5.73 | 2.14 | 2.64 | 2.72 | 2.16 | 45.  | 22   | 35.  | 83.  |
| Thomasville, Ga.      | 2.82 | 1.98 | 2.67 | 3.28 | 2.87 | 1.28 | 2.38 | 1.78 | 3.63 | 3.   | 5.45 | 1.50 | 6.70 | 4.68 | 3.46 | 5.24 | 2.03 | 2.96 | 4.31 | 1.61 | 52.  | 27   | 44.  | 88.  |
| McDonough, Ga.        | 2.62 | 2.04 | 2.83 | 3.50 | 2.67 | 1.28 | 2.38 | 1.62 | 3.02 | 6.   | 5.33 | 1.33 | 6.56 | 4.32 | 3.10 | 5.08 | 1.98 | 2.61 | 3.02 | 1.70 | 49.  | 74   | 48.  | 51.  |
| Waynesboro, Va.       | 4.81 | 2.68 | 4.38 | 3.97 | 3.51 | 1.26 | 2.38 | 1.62 | 3.02 | 6.   | 5.33 | 1.33 | 6.56 | 4.32 | 3.10 | 5.08 | 1.98 | 2.61 | 3.02 | 1.70 | 49.  | 74   | 48.  | 51.  |
| Memphis, Tenn.        | 4.70 | 2.68 | 4.38 | 3.97 | 3.51 | 1.26 | 2.38 | 1.62 | 3.02 | 6.   | 5.33 | 1.33 | 6.56 | 4.32 | 3.10 | 5.08 | 1.98 | 2.61 | 3.02 | 1.70 | 49.  | 74   | 48.  | 51.  |
| Nashville, Tenn.      | 5.52 | 3.38 | 5.06 | 4.05 | 3.50 | 1.26 | 2.38 | 1.62 | 3.02 | 6.   | 5.33 | 1.33 | 6.56 | 4.32 | 3.10 | 5.08 | 1.98 | 2.61 | 3.02 | 1.70 | 49.  | 74   | 48.  | 51.  |
| Birmingham, Ala.      | 4.70 | 2.68 | 4.38 | 3.97 | 3.51 | 1.26 | 2.38 | 1.62 | 3.02 | 6.   | 5.33 | 1.33 | 6.56 | 4.32 | 3.10 | 5.08 | 1.98 | 2.61 | 3.02 | 1.70 | 49.  | 74   | 48.  | 51.  |
| Mobile, Ala.          | 5.32 | 3.16 | 5.45 | 5.68 | 5.27 | 1.19 | 1.96 | 4.32 | 3.79 | 4.55 | 4.32 | 3.79 | 4.55 | 4.32 | 3.79 | 4.55 | 4.32 | 3.79 | 4.55 | 4.32 | 3.79 | 4.55 | 4.32 | 3.79 |
| Meredian, Miss.       | 5.32 | 3.16 | 5.45 | 5.68 | 5.27 | 1.19 | 1.96 | 4.32 | 3.79 | 4.55 | 4.32 | 3.79 | 4.55 | 4.32 | 3.79 | 4.55 | 4.32 | 3.79 | 4.55 | 4.32 | 3.79 | 4.55 | 4.32 | 3.79 |
| Vicksburg, Miss.      | 5.32 | 3.16 | 5.45 | 5.68 | 5.27 | 1.19 | 1.96 | 4.32 | 3.79 | 4.55 | 4.32 | 3.79 | 4.55 | 4.32 | 3.79 | 4.55 | 4.32 | 3.79 | 4.55 | 4.32 | 3.79 | 4.55 | 4.32 | 3.79 |
| New Orleans, La.      | 4.34 | 6.01 | 4.25 | 3.83 | 4.72 | 1.19 | 1.96 | 4.32 | 3.79 | 4.55 | 4.32 | 3.79 | 4.55 | 4.32 | 3.79 | 4.55 | 4.32 | 3.79 | 4.55 | 4.32 | 3.79 | 4.55 | 4.32 | 3.79 |
| Shreveport, La.       | 3.93 | 6.91 | 3.29 | 2.75 | 4.11 | 1.00 | 1.43 | 2.22 | 4.46 | 3.83 | 2.87 | 2.79 | 3.21 | 2.84 | 1.94 | 2.84 | 1.94 | 2.84 | 1.94 | 2.84 | 1.94 | 2.84 | 1.94 | 2.84 |
| Amarillo, Tex.        | 1.61 | 0.97 | 1.21 | 82   | 1.26 | 2.31 | 1.43 | 2.35 | 2.27 | 1.50 | 2.87 | 2.27 | 1.50 | 2.87 | 2.27 | 1.50 | 2.87 | 2.27 | 1.50 | 2.87 | 2.27 | 1.50 | 2.87 | 2.27 |
| Brownsville, Tex.     | 1.50 | 2.07 | 1.21 | 82   | 1.26 | 2.31 | 1.43 | 2.35 | 2.27 | 1.50 | 2.87 | 2.27 | 1.50 | 2.87 | 2.27 | 1.50 | 2.87 | 2.27 | 1.50 | 2.87 | 2.27 | 1.50 | 2.87 | 2.27 |
| El Paso, Tex.         | 2.46 | 0.01 | 1.41 | 1.12 | 3.06 | 2.24 | 2.63 | 0.95 | 3.33 | 3.7  | 5.88 | 3.37 | 5.88 | 3.37 | 5.88 | 3.37 | 5.88 | 3.37 | 5.88 | 3.37 | 5.88 | 3.37 | 5.88 | 3.37 |
| Fort Worth, Tex.      | 2.05 | 1.86 | 1.76 | 1.67 | 2.32 | 2.93 | 4.02 | 2.39 | 4.65 | 82   | 3.35 | 82   | 3.35 | 82   | 3.35 | 82   | 3.35 | 82   | 3.35 | 82   | 3.35 | 82   | 3.35 | 82   |
| Galveston, Tex.       | 3.41 | 8.42 | 2.83 | 2.95 | 2.68 | 7.29 | 3.06 | 6.07 | 8.42 | 1.05 | 2.46 | 1.18 | 2.17 | 3.83 | 2.32 | 2.89 | 2.17 | 3.83 | 2.32 | 2.89 | 2.17 | 3.83 | 2.32 | 2.89 |
| Oklahoma City, Okla.  | 1.19 | 2.09 | 1.11 | 1.15 | 1.98 | 95   | 3.29 | 1.46 | 4.88 | 3.61 | 3.67 | 1.93 | 2.86 | 1.13 | 2.89 | 2.44 | 3.05 | 1.93 | 2.86 | 1.13 | 2.89 | 2.44 | 3.05 | 1.93 |
| Little Rock, Ark.     | 4.73 | 2.63 | 3.84 | 1.40 | 4.62 | 6.84 | 6.16 | 6.81 | 4.73 | 2.74 | 3.76 | 3.12 | 3.67 | 2.1  | 2.22 | 98   | 1.29 | 1.74 | 3.67 | 67   | 61   | 1.3  | 61   | 1.3  |
| Hayes, Mont.          | .76  | 12   | .49  | .05  | .86  | 1.05 | 1.12 | .40  | 2.24 | .54  | 2.06 | .66  | 1.64 | .67  | 1.08 | .80  | .63  | .57  | .88  | .03  | .33  | .03  | .33  | .03  |
| Miles City, Mont.     | 1.67 | .88  | 1.11 | 1.06 | .96  | 1.40 | 1.80 | .98  | 1.40 | 1.22 | 2.06 | .66  | 1.64 | .67  | 1.08 | .80  | .63  | .57  | .88  | .03  | .33  | .03  | .33  | .03  |
| Kalispell, Mont.      | .42  | .29  | .64  | 1.32 | 1.02 | .80  | 1.63 | .91  | 2.65 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 |
| Cheyenne, Wyo.        | .85  | .77  | .70  | 1.39 | .91  | 1.1  | 1.23 | .80  | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 |
| Sheridan, Wyo.        | .61  | .76  | .56  | 1.23 | .76  | .69  | .83  | .55  | .61  | 1.43 | .40  | 1.01 | 1.83 | 1.01 | 1.83 | 1.01 | 1.83 | 1.01 | 1.83 | 1.01 | 1.83 | 1.01 | 1.83 | 1.01 |
| ueblo, Colo.          | .41  | .56  | .56  | 1.23 | .76  | .69  | .83  | .55  | .61  | 1.43 | .40  | 1.01 | 1.83 | 1.01 | 1.83 | 1.01 | 1.83 | 1.01 | 1.83 | 1.01 | 1.83 | 1.01 | 1.83 | 1.01 |
| Grand Junction, Colo. | .67  | .63  | .67  | .04  | .74  | 1.12 | .89  | .46  | 1.00 | 2.67 | 1.08 | .64  | 2.26 | 1.01 | 1.07 | .09  | 1.07 | .09  | 1.07 | .09  | 1.07 | .09  | 1.07 | .09  |
| Santa Fe, N. Mex.     | .53  | .04  | .57  | .04  | .74  | 1.12 | .89  | .46  | 1.00 | 2.67 | 1.08 | .64  | 2.26 | 1.01 | 1.07 | .09  | 1.07 | .09  | 1.07 | .09  | 1.07 | .09  | 1.07 | .09  |
| Albuquerque, N. Mex.  | .67  | .63  | .67  | .04  | .74  | 1.12 | .89  | .46  | 1.00 | 2.67 | 1.08 | .64  | 2.26 | 1.01 | 1.07 | .09  | 1.07 | .09  | 1.07 | .09  | 1.07 | .09  | 1.07 | .09  |
| Phoenix, Ariz.        | .80  | .40  | .77  | .09  | .63  | .10  | .40  | .74  | 1.12 | .89  | .46  | 1.00 | 2.67 | 1.08 | .64  | 2.26 | 1.01 | 1.07 | .09  | 1.07 | .09  | 1.07 | .09  | 1.07 |
| Medan, Utah           | .85  | .23  | .06  | .34  | 1.03 | .09  | .89  | .61  | .79  | .28  | .32  | .40  | 1.03 | .61  | .79  | .28  | .32  | .40  | 1.03 | .61  | .79  | .28  | .32  | .40  |
| Salt Lake City, Utah  | 1.31 | 1.47 | 1.47 | 2.24 | 1.88 | .99  | 2.05 | .46  | 1.92 | .61  | .11  | .88  | .85  | .10  | .88  | .85  | .10  | .88  | .85  | .10  | .88  | .85  | .10  | .88  |
| Winnemucca, Nev.      | 1.08 | .64  | .91  | 2.1  | 1.96 | .66  | 1.84 | .95  | .88  | .23  | .72  | .96  | .20  | .01  | .41  | .26  | .04  | .24  | 1.07 | 1.57 | 1.08 | 1.08 | 1.08 | 1.08 |
| Boise, Idaho          | 1.73 | 1.20 | 1.44 | 1.59 | 1.35 | 2.65 | 2.18 | 1.37 | 1.87 | 1.43 | 1.43 | 1.43 | 1.43 | 1.43 | 1.43 | 1.43 | 1.43 | 1.43 | 1.43 | 1.43 | 1.43 | 1.43 | 1.43 |      |
| Seattle, Wash.        | 4.04 | 6.31 | 3.80 | 1.29 | 3.05 | 5.28 | 3.91 | 4.40 | 2.19 | 1.61 | 1.12 | .63  | .83  | .23  | .72  | .96  | .20  | .01  | .41  | .26  | .04  | .24  | 1.07 | 1.57 |
| Walla Walla, Wash.    | 1.98 | 2.1  | 1.70 | 3.51 | 1.61 | 2.50 | 1.61 | 2.40 | 1.61 | 1.00 | 1.52 | .96  | .61  | .11  | .64  | .35  | .98  | 1.98 | 1.98 | 1.98 | 1.98 | 1.98 | 1.98 | 1.98 |
| Portland, Ore.        | 6.00 | 6.02 | 5.30 | 1.40 | 3.91 | 5.18 | 2.87 | 2.40 | 2.19 | 1.61 | 1.00 | 1.52 | .96  | .61  | .11  | .64  | .35  | .98  | 1.98 | 1.98 | 1.98 | 1.98 | 1.98 | 1.98 |
| Roseburg, Ore.        | 5.31 | 4.42 | 4.40 | 1.20 | 3.25 | 1.65 | 2.27 | 2.00 | 1.93 | 1.21 | .72  | .29  | .11  | .01  | .01  | .01  | .01  | .01  | .01  | .01  | .01  | .01  | .01  | .01  |
| Eureka, Calif.        | 7.11 | 3.83 | 6.43 | 2.31 | 6.23 | 3.61 | 3.83 | .88  | 1.90 | 1.23 | .72  | .29  | .11  | .01  | .01  | .01  | .01  | .01  | .01  | .01  | .01  | .01  | .01  | .01  |
| Fresno, Calif.        | 1.73 | .43  | 1.43 | 1.80 | 1.58 | .01  | .14  | .08  | .08  | .45  | .01  | .00  | .01  | .00  | .01  | .00  | .01  | .00  | .01  | .00  | .01  | .00  | .01  | .00  |
| Los Angeles, Calif.   | 3.10 | 3.22 | 3.07 | 2.04 | 2.78 | .01  | .14  | .08  | .08  | .45  | .01  | .00  | .01  | .00  | .01  | .00  | .01  | .00  | .01  | .00  | .01  | .00  | .01  | .00  |
| Sacramento, Calif.    | 3.72 | 1.33 | 3.02 | 2.97 | 2.57 | .13  | 1.51 | .16  | .77  | .26  | .15  | .30  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  |
| San Diego, Calif.     | 2.06 | 3.03 | 2.03 | 1.88 | 1.72 | .24  | 1.72 | .24  | 1.72 | .24  | 1.72 | .24  | 1.72 | .24  | 1.72 | .24  | 1.72 | .24  | 1.72 | .24  | 1.72 | .24  | 1.72 | .24  |
| San Francisco, Calif. | 4.54 | 1.03 | 3.85 | 4.68 | 3.14 | .07  | 1.61 | .51  | .80  | .12  | .18  | .68  | .02  | .01  | .01  | .01  | .01  | .01  | .01  | .01  | .01  | .01  | .01  | .01  |

1 Normals are based on records of 20 or more years of observations.

T = Trace, indicates an amount too small to measure.

Weather Bureau.



TABLE 497.—Frost: Dates of killing frosts, with length of growing season

| Station              | Date of last killing frost in spring, 1934 | Date of first killing frost in fall, 1934 | Averages and extremes of killing frost for 30 to 51 years |              |               |                       |      |  | Length of growing season between average dates of killing frosts |
|----------------------|--|---|---|--------------|---------------|-----------------------|------|--|--|
|                      |  |   | Spring frosts   |              | Fall frosts   |                       | Days |  |  |
|                      |  |   | Latest date   | Average date | Earliest date | Average date of first |      |  |  |
| Greenville, Maine    | June 8 <sup>1</sup>                        | Oct. 1 <sup>1</sup>                       | June 23   | May 30       | Aug. 26       | Sept. 14              | 107  |  |  |
| Portland, Maine      | Apr. 29                                    | Oct. 5                                    | June 20   | Apr. 19      | Sept. 11      | Oct. 17               | 181  |  |  |
| Concord, N. H.       | do   | Oct. 10                                   | June 5  | May 7        | Sept. 6       | Oct. 3                | 149  |  |  |
| Northfield, Vt.      | June 8 <sup>1</sup>                        | Oct. 2                                    | June 29   | May 22       | Aug. 26       | Sept. 18              | 119  |  |  |
| Boston, Mass.        | Apr. 5 <sup>1</sup>                        | Oct. 13                                   | May 16  | Apr. 14      | Sept. 26      | Oct. 26               | 195  |  |  |
| Hartford, Conn.      | Apr. 29                                    | Nov. 2 <sup>1</sup>                       | May 12  | Apr. 20      | Sept. 11      | Oct. 14               | 177  |  |  |
| Albany, N. Y.        | Apr. 29 <sup>1</sup>                       | Oct. 14                                   | May 30  | Apr. 24      | Sept. 15      | Oct. 15               | 174  |  |  |
| Buffalo, N. Y.       | Apr. 28                                    | Oct. 20                                   | May 23  | Apr. 28      | Oct. 2        | Oct. 22               | 177  |  |  |
| Canton, N. Y.        | May 8                                      | Oct. 1                                    | June 2  | May 4        | Sept. 11      | Sept. 30              | 149  |  |  |
| Setauket, N. Y.      | Apr. 5 <sup>1</sup>                        | Nov. 3 <sup>1</sup>                       | May 17  | Apr. 16      | Oct. 21       | Nov. 10               | 208  |  |  |
| Syracuse, N. Y.      | Apr. 29 <sup>1</sup>                       | Oct. 13 <sup>1</sup>                      | May 5   | Apr. 23      | Sept. 21      | Oct. 22               | 182  |  |  |
| Atlantic City, N. J. | Mar. 30 <sup>1</sup>                       | Nov. 3                                    | Apr. 30   | Apr. 10      | Oct. 1        | Nov. 5                | 209  |  |  |
| Trenton, N. J.       | Apr. 5                                     | do  | May 12  | Apr. 16      | Oct. 11       | Oct. 24               | 191  |  |  |
| Erie, Pa.            | Apr. 28 <sup>1</sup>                       | Oct. 14                                   | May 17  | Apr. 20      | Oct. 9        | Nov. 1                | 195  |  |  |
| Harrisburg, Pa.      | Apr. 28                                    | do  | May 12  | Apr. 9       | Oct. 3        | Oct. 28               | 202  |  |  |
| Pittsburgh, Pa.      | Apr. 27                                    | Oct. 13                                   | May 29  | Apr. 23      | Sept. 19      | Oct. 21               | 181  |  |  |
| Scranton, Pa.        | Apr. 29                                    | do  | May 12  | Apr. 21      | Sept. 14      | Oct. 14               | 176  |  |  |
| Cincinnati, Ohio     | Apr. 28                                    | Nov. 2                                    | Apr. 28   | Apr. 8       | Sept. 30      | Oct. 23               | 198  |  |  |
| Cleveland, Ohio      | do   | do  | May 21  | Apr. 16      | Oct. 2        | Nov. 3                | 201  |  |  |
| Columbus, Ohio       | do   | Oct. 14                                   | May 17  | Apr. 18      | Sept. 21      | Oct. 19               | 184  |  |  |
| Dayton, Ohio         | do   | do  | May 25  | Apr. 19      | Sept. 30      | Oct. 20               | 184  |  |  |
| Toledo, Ohio         | do   | do  | May 29  | Apr. 22      | Sept. 9       | Oct. 18               | 179  |  |  |
| Evansville, Ind.     | Mar. 28 <sup>1</sup>                       | Nov. 12                                   | Apr. 26   | Apr. 5       | Oct. 9        | Oct. 29               | 207  |  |  |
| Fort Wayne, Ind.     | Apr. 25                                    | Oct. 30                                   | May 28  | Apr. 25      | Sept. 14      | Oct. 13               | 171  |  |  |
| Indianapolis, Ind.   | Apr. 13 <sup>1</sup>                       | Oct. 23                                   | May 25  | Apr. 16      | Sept. 21      | Oct. 20               | 187  |  |  |
| Cairo, Ill.          | Mar. 28                                    | Nov. 12                                   | Apr. 30   | Mar. 31      | Sept. 30      | Oct. 29               | 212  |  |  |
| Chicago, Ill.        | Apr. 13 <sup>1</sup>                       | Oct. 23                                   | May 25  | Apr. 16      | Sept. 20      | Oct. 19               | 186  |  |  |
| Peoria, Ill.         | Apr. 25                                    | do  | May 11  | Apr. 15      | Sept. 26      | do                    | 187  |  |  |
| Springfield, Ill.    | do   | do  | May 25  | do           | Sept. 25      | do                    | 187  |  |  |
| Alpena, Mich.        | May 12                                     | Oct. 10                                   | June 9  | May 13       | Sept. 6       | Oct. 1                | 141  |  |  |
| Detroit, Mich.       | do   | Oct. 13                                   | May 31  | Apr. 28      | Sept. 21      | Oct. 15               | 170  |  |  |
| Grand Haven, Mich.   | May 12 <sup>1</sup>                        | Oct. 19 <sup>1</sup>                      | May 28  | Apr. 30      | Sept. 23      | Oct. 18               | 171  |  |  |
| Grand Rapids, Mich.  | May 12                                     | Oct. 19                                   | May 30  | May 1        | do            | do                    | 170  |  |  |
| Ludington, Mich.     | May 25                                     | do  | June 17   | May 2        | Sept. 4       | Oct. 21               | 172  |  |  |
| Marquette, Mich.     | Apr. 23                                    | do  | June 6  | May 13       | Aug. 23       | Oct. 9                | 149  |  |  |
| Green Bay, Wis.      | May 12                                     | Oct. 23                                   | May 30  | May 5        | Sept. 16      | do                    | 187  |  |  |
| La Crosse, Wis.      | Apr. 27 <sup>1</sup>                       | do  | May 24  | Apr. 29      | Sept. 10      | do                    | 163  |  |  |
| Madison, Wis.        | Apr. 27                                    | do  | May 25  | Apr. 26      | Sept. 16      | Oct. 17               | 174  |  |  |
| Milwaukee, Wis.      | Apr. 28                                    | do  | May 29  | do           | Sept. 25      | Oct. 18               | 175  |  |  |
| Duluth, Minn.        | May 15 <sup>1</sup>                        | Oct. 26                                   | June 14   | May 6        | Sept. 10      | Oct. 5                | 152  |  |  |
| Minneapolis, Minn.   | Apr. 27                                    | Oct. 23 <sup>1</sup>                      | May 20  | Apr. 27      | Sept. 13      | Oct. 10               | 166  |  |  |
| Moorhead, Minn.      | May 11                                     | Sept. 21                                  | June 8  | May 12       | Aug. 25       | Sept. 24              | 135  |  |  |
| Charles City, Iowa   | Apr. 27                                    | Oct. 23                                   | May 21  | Apr. 29      | Sept. 12      | Oct. 2                | 156  |  |  |
| Des Moines, Iowa     | Apr. 25                                    | do  | May 31  | Apr. 21      | Sept. 13      | Oct. 9                | 171  |  |  |
| Dubuque, Iowa        | do   | do  | May 21  | Apr. 20      | Sept. 26      | Oct. 16               | 179  |  |  |
| Keokuk, Iowa         | Apr. 21 <sup>1</sup>                       | do  | May 4   | Apr. 12      | Sept. 18      | Oct. 17               | 188  |  |  |
| Columbia, Mo.        | Apr. 25                                    | do  | May 9   | Apr. 13      | do            | Oct. 18               | 188  |  |  |
| St. Joseph, Mo.      | Mar. 31 <sup>1</sup>                       | do  | Apr. 28   | Apr. 9       | Sept. 26      | Oct. 17               | 191  |  |  |
| St. Louis, Mo.       | Mar. 28                                    | Nov. 1                                    | May 22  | Apr. 3       | Sept. 30      | Oct. 29               | 209  |  |  |
| Springfield, Mo.     | Mar. 31                                    | Oct. 23                                   | May 19  | Apr. 12      | do            | Oct. 22               | 193  |  |  |
| Bismarck, N. Dak.    | Apr. 27                                    | Sept. 15                                  | June 7  | May 11       | Aug. 23       | Sept. 21              | 133  |  |  |
| Devils Lake, N. Dak. | May 13                                     | do  | do  | May 16       | Aug. 8        | Sept. 24              | 131  |  |  |
| Williston, N. Dak.   | do   | do  | June 16   | do           | Aug. 22       | Sept. 20              | 127  |  |  |
| Huron, S. Dak.       | Apr. 27 <sup>1</sup>                       | Sept. 21                                  | June 21   | May 9        | Aug. 23       | Sept. 25              | 139  |  |  |
| Pierre, S. Dak.      | Apr. 24                                    | Sept. 25 <sup>1</sup>                     | May 24  | Apr. 30      | Sept. 12      | Oct. 7                | 160  |  |  |
| Rapid City, S. Dak.  | do   | Sept. 15                                  | do  | May 3        | Sept. 13      | Oct. 1                | 158  |  |  |
| Yankton, S. Dak.     | Apr. 26 <sup>1</sup>                       | Sept. 26                                  | May 27  | May 1        | Sept. 14      | Oct. 6                | 154  |  |  |
| North Platte, Nebr.  | Apr. 20                                    | do  | May 24  | do           | Sept. 10      | Oct. 2                | 184  |  |  |
| Omaha, Nebr.         | Apr. 25                                    | Oct. 23                                   | May 19  | Apr. 14      | Sept. 18      | Oct. 15               | 149  |  |  |
| Valentine, Nebr.     | Apr. 24                                    | Sept. 25                                  | June 21   | May 6        | Sept. 12      | Oct. 2                | 182  |  |  |
| Concordia, Kans.     | Mar. 31                                    | Oct. 28                                   | May 19  | Apr. 17      | Sept. 27      | Oct. 16               | 188  |  |  |
| Dodge City, Kans.    | Mar. 31 <sup>1</sup>                       | do  | May 27  | Apr. 16      | Sept. 23      | Oct. 21               | 193  |  |  |
| Iola, Kans.          | do   | do  | May 4   | Apr. 7       | Sept. 26      | Oct. 17               | 197  |  |  |
| Wichita, Kans.       | Mar. 31                                    | Nov. 11                                   | May 15  | Apr. 9       | Sept. 23      | Oct. 23               | 195  |  |  |
| Washington, D. C.    | Mar. 29                                    | Nov. 3                                    | May 12  | Apr. 8       | Oct. 2        | Oct. 20               | 201  |  |  |
| Lynchburg, Va.       | Apr. 22                                    | Oct. 14                                   | May 7   | Apr. 9       | do            | Oct. 27               | 236  |  |  |
| Norfolk, Va.         | Mar. 24 <sup>1</sup>                       | Nov. 13 <sup>1</sup>                      | Apr. 26   | Mar. 25      | Oct. 11       | Nov. 16               | 216  |  |  |
| Richmond, Va.        | Mar. 30                                    | Oct. 14                                   | do  | Mar. 31      | Oct. 12       | Nov. 2                | 180  |  |  |
| Wytheville, Va.      | Apr. 28                                    | do  | May 27  | Apr. 20      | Sept. 19      | Oct. 17               | 161  |  |  |
| Elkins, W. Va.       | do   | do  | June 1  | May 4        | Sept. 20      | Oct. 12               | 184  |  |  |
| Parkersburg, W. Va.  | do   | do  | May 22  | Apr. 17      | Sept. 29      | Oct. 18               | 194  |  |  |
| Asheville, N. C.     | Apr. 14                                    | Oct. 29                                   | May 10  | Apr. 11      | Oct. 3        | Oct. 22               | 225  |  |  |
| Charlotte, N. C.     | Mar. 15                                    | Nov. 13                                   | Apr. 26   | Mar. 25      | Oct. 8        | Nov. 5                | 223  |  |  |
| Raleigh, N. C.       | Mar. 13                                    | Oct. 29                                   | do  | Mar. 27      | do            | do                    | 229  |  |  |
| Wilmington, N. C.    | Mar. 21                                    | do  | May 1   | Mar. 21      | Oct. 16       | Nov. 15               | 223  |  |  |

<sup>1</sup> Temperature 32° F. or below.

TABLE 497.—Frost: Dates of killing frosts, with length of growing season—Con.

| Station                | Date of last killing frost in spring, 1934 | Date of first killing frost in fall, 1934 | Averages and extremes of killing frost for 30 to 51 years |                  |               |                       | Length of growing season between average dates of killing frosts |
|------------------------|--|---|---|------------------|---------------|-----------------------|--|
|                        |  |   | Spring frosts   |                  | Fall frosts   |                       |  |
|                        |  |   | Latest date   | Average date     | Earliest date | Average date of first |  |
| Charleston, S. C.      | Mar. 12 <sup>1</sup>                       | Nov. 13                                   | Apr. 2  | Feb. 28          | Oct. 28       | Dec. 1                | Days 276   |
| Columbia, S. C.        | Mar. 15                                    | Nov. 12                                   | Apr. 17   | Mar. 17          | Oct. 30       | Nov. 18               | 246  |
| Greenville, S. C.      | Apr. 14                                    | do  | Apr. 24   | do               | Oct. 10       | Nov. 13               | 241  |
| Atlanta, Ga.           | Mar. 15                                    | Oct. 29                                   | Apr. 17   | Mar. 29          | Oct. 11       | Nov. 8                | 224  |
| Augusta, Ga.           | Mar. 13                                    | Nov. 13                                   | do  | Mar. 15          | Oct. 21       | Nov. 12               | 242  |
| Macon, Ga.             | do   | do  | Apr. 18   | Mar. 14          | Oct. 11       | Nov. 14               | 245  |
| Savannah, Ga.          | Mar. 12                                    | Nov. 16                                   | Apr. 13   | Feb. 26          | Oct. 25       | Nov. 23               | 270  |
| Thomasville, Ga.       | Mar. 11                                    | Nov. 13                                   | Apr. 26   | Mar. 8           | do            | Nov. 20               | 257  |
| Apalachicola, Fla.     | do   | Dec. 11 <sup>1</sup>                      | Mar. 23   | Feb. 5           | Nov. 13       | Dec. 28               | 326  |
| Avon Park, Fla.        | None                                       | Dec. 9                                    | Mar. 14   | Jan. 12          | Nov. 14       | Dec. 26               | 348  |
| Jacksonville, Fla.     | Mar. 11                                    | Dec. 8                                    | Apr. 10   | Feb. 16          | Nov. 12       | Dec. 7                | 294  |
| Miami, Fla.            | None                                       | Dec. 12                                   | Mar. 3  | ( <sup>2</sup> ) | Nov. 21       | ( <sup>2</sup> )      | ( <sup>2</sup> )   |
| Tampa, Fla.            | None                                       | do  | Mar. 19   | ( <sup>2</sup> ) | do            | ( <sup>2</sup> )      | ( <sup>2</sup> )   |
| Chattanooga, Tenn.     | Mar. 20                                    | Nov. 12                                   | May 14  | Mar. 29          | Sept. 30      | Nov. 4                | 220  |
| Knoxville, Tenn.       | do   | Oct. 29                                   | Apr. 26   | Apr. 2           | Oct. 1        | Oct. 29               | 210  |
| Memphis, Tenn.         | Mar. 28                                    | Nov. 12                                   | Apr. 25   | Mar. 21          | Oct. 2        | Nov. 4                | 228  |
| Nashville, Tenn.       | Mar. 29                                    | Oct. 29                                   | Apr. 24   | Mar. 31          | Oct. 8        | Oct. 28               | 211  |
| Birmingham, Ala.       | Mar. 15                                    | Nov. 12                                   | Apr. 20   | Mar. 17          | Oct. 21       | Nov. 10               | 238  |
| Mobile, Ala.           | Mar. 11 <sup>1</sup>                       | Dec. 8                                    | Apr. 6  | Feb. 17          | Oct. 31       | Dec. 7                | 293  |
| Montgomery, Ala.       | Mar. 13                                    | Nov. 13                                   | Apr. 5  | Mar. 8           | Oct. 21       | Nov. 13               | 250  |
| New Orleans, La.       | Feb. 27 <sup>1</sup>                       | Dec. 12                                   | Mar. 27   | Jan. 25          | Nov. 11       | Dec. 18               | 327  |
| Shreveport, La.        | Mar. 19                                    | Dec. 1                                    | Apr. 9  | Mar. 6           | Oct. 20       | Nov. 12               | 251  |
| Amarillo, Tex.         | Mar. 27                                    | Nov. 30 <sup>1</sup>                      | Apr. 23   | Mar. 23          | Oct. 19       | Nov. 9                | 231  |
| Amarillo, Tex.         | Mar. 18                                    | Nov. 22                                   | May 23  | Apr. 14          | Oct. 16       | Nov. 1                | 201  |
| Brownsville, Tex.      | None                                       | None                                      | Mar. 14   | Jan. 25          | Nov. 15       | Dec. 23               | 332  |
| Corpus Christi, Tex.   | None                                       | None                                      | Mar. 19   | Feb. 15          | Nov. 29       | Dec. 20               | 308  |
| Del Rio, Tex.          | Jan. 9                                     | Dec. 20                                   | Mar. 27   | Feb. 23          | Oct. 27       | Nov. 27               | 277  |
| El Paso, Tex.          | Mar. 19                                    | Nov. 22                                   | Apr. 26   | Mar. 19          | Oct. 23       | Nov. 16               | 242  |
| Fort Worth, Tex.       | do   | Dec. 1                                    | Apr. 9  | Mar. 10          | Oct. 22       | do                    | 251  |
| Galveston, Tex.        | do   | None                                      | Mar. 19   | Jan. 19          | Nov. 16       | Dec. 26               | 341  |
| Palestine, Tex.        | Mar. 19                                    | Dec. 7 <sup>1</sup>                       | Apr. 5  | Mar. 13          | Oct. 20       | Nov. 13               | 245  |
| San Antonio, Tex.      | do   | Dec. 8                                    | do  | Feb. 23          | Oct. 30       | Nov. 29               | 279  |
| Taylor, Tex.           | do   | Dec. 1 <sup>1</sup>                       | do  | Mar. 5           | do            | Nov. 26               | 266  |
| Oklahoma City, Okla.   | do   | Dec. 1                                    | Apr. 30   | Mar. 30          | Oct. 7        | Nov. 3                | 218  |
| Fort Smith, Ark.       | do   | Nov. 23                                   | Apr. 17   | Mar. 23          | Oct. 9        | Nov. 6                | 228  |
| Little Rock, Ark.      | do   | do  | Apr. 26   | Mar. 18          | Oct. 22       | Nov. 14               | 241  |
| Havre, Mont.           | Apr. 16                                    | Sept. 20                                  | June 6  | May 14           | Aug. 25       | Sept. 20              | 129  |
| Helena, Mont.          | May 13                                     | Sept. 19                                  | June 9  | May 7            | do            | Sept. 29              | 145  |
| Kalispell, Mont.       | Apr. 3                                     | Sept. 20                                  | June 7  | May 10           | Sept. 6       | Sept. 30              | 143  |
| Miles City, Mont.      | Apr. 16                                    | Sept. 21                                  | May 31  | May 5            | Sept. 7       | Oct. 2                | 150  |
| Cheyenne, Wyo.         | May 13 <sup>1</sup>                        | Sept. 15                                  | June 13   | May 18           | Aug. 25       | Sept. 22              | 127  |
| Lander, Wyo.           | Apr. 19                                    | do  | June 20   | do               | Aug. 23       | Sept. 18              | 123  |
| Sheridan, Wyo.         | May 13                                     | Sept. 21                                  | June 6  | May 20           | Aug. 25       | Sept. 20              | 123  |
| Yellowstone Park, Wyo. | May 9                                      | Sept. 9                                   | June 22   | May 21           | do            | Sept. 16              | 118  |
| Denver, Colo.          | May 13 <sup>1</sup>                        | Sept. 28                                  | June 6  | May 3            | Sept. 12      | Oct. 10               | 160  |
| Grand Junction, Colo.  | Apr. 6 <sup>1</sup>                        | Oct. 24                                   | May 14  | Apr. 16          | Sept. 14      | Oct. 19               | 186  |
| Pueblo, Colo.          | Apr. 6                                     | Oct. 28                                   | June 2  | Apr. 24          | Sept. 12      | Oct. 10               | 169  |
| Roswell, N. Mex.       | Mar. 19                                    | Nov. 22                                   | May 7   | Apr. 10          | Oct. 10       | Oct. 28               | 201  |
| Santa Fe, N. Mex.      | Apr. 7 <sup>1</sup>                        | Nov. 21                                   | May 23  | Apr. 25          | Sept. 25      | Oct. 19               | 177  |
| Flagstaff, Ariz.       | June 14 <sup>1</sup>                       | Sept. 26                                  | June 17   | May 31           | Sept. 12      | Sept. 24              | 116  |
| Phoenix, Ariz.         | None                                       | Nov. 30                                   | Mar. 31   | Feb. 10          | Nov. 5        | Dec. 3                | 296  |
| Tucson, Ariz.          | Apr. 4 <sup>1</sup>                        | Nov. 21 <sup>1</sup>                      | Apr. 4  | Mar. 11          | Oct. 22       | Nov. 9                | 243  |
| Yuma, Ariz.            | None                                       | None                                      | Mar. 15   | Jan. 20          | Nov. 19       | Dec. 20               | 334  |
| Modena, Utah           | June 2 <sup>1</sup>                        | Sept. 25                                  | July 3  | May 21           | Sept. 5       | Sept. 29              | 131  |
| Salt Lake City, Utah.  | Apr. 2 <sup>1</sup>                        | Nov. 21 <sup>1</sup>                      | June 18   | Apr. 18          | Sept. 22      | Oct. 20               | 185  |
| Reno, Nev.             | Apr. 4 <sup>1</sup>                        | Sept. 28                                  | June 13   | May 14           | Sept. 6       | Oct. 6                | 145  |
| Winnemucca, Nev.       | Apr. 4                                     | do  | June 22   | do               | Aug. 22       | Sept. 27              | 136  |
| Boise, Idaho           | do   | do  | June 16   | Apr. 27          | Sept. 11      | Oct. 12               | 168  |
| Lewistown, Idaho       | Apr. 4 <sup>1</sup>                        | Sept. 25 <sup>1</sup>                     | May 10  | Apr. 6           | Sept. 21      | Oct. 24               | 201  |
| Pocatello, Idaho       | Apr. 3 <sup>1</sup>                        | Sept. 27                                  | June 1  | Apr. 29          | Sept. 8       | Oct. 6                | 160  |
| Seattle, Wash.         | Jan. 8                                     | Dec. 27                                   | May 10  | Mar. 16          | Oct. 18       | Nov. 22               | 251  |
| Spokane, Wash.         | Apr. 15 <sup>1</sup>                       | Sept. 25                                  | June 8  | Apr. 14          | Sept. 7       | Oct. 13               | 182  |
| Walla Walla, Wash.     | Mar. 24                                    | Oct. 16                                   | May 9   | Mar. 31          | Sept. 24      | Nov. 4                | 218  |
| Baker, Oreg.           | Apr. 2                                     | Sept. 25                                  | June 23   | May 17           | Aug. 30       | Sept. 29              | 135  |
| Portland, Oreg.        | None                                       | None                                      | May 2   | Mar. 15          | Oct. 13       | Nov. 21               | 251  |
| Roseburg, Oreg.        | None                                       | None                                      | May 24  | Apr. 8           | Sept. 24      | Nov. 11               | 217  |
| Eureka, Calif.         | None                                       | None                                      | Apr. 7  | Mar. 16          | Nov. 11       | Dec. 18               | 277  |
| Fresno, Calif.         | None                                       | Dec. 3                                    | Apr. 14   | Feb. 22          | Oct. 31       | Nov. 30               | 261  |
| Independence, Calif.   | Feb. 27 <sup>1</sup>                       | Nov. 21 <sup>1</sup>                      | May 24  | Apr. 13          | Sept. 24      | Oct. 27               | 197  |
| Los Angeles, Calif.    | None                                       | None                                      | Feb. 17   | ( <sup>2</sup> ) | Nov. 2        | ( <sup>2</sup> )      | ( <sup>2</sup> )   |
| Red Bluff, Calif.      | None                                       | Dec. 1 <sup>1</sup>                       | May 9   | Mar. 8           | Nov. 5        | Dec. 5                | 272  |
| Sacramento, Calif.     | None                                       | None                                      | May 7   | Feb. 19          | Nov. 11       | Nov. 29               | 283  |
| San Bernardino, Calif. | Apr. 4 <sup>1</sup>                        | Nov. 22 <sup>1</sup>                      | Apr. 23   | Mar. 8           | Oct. 23       | Nov. 22               | 259  |
| San Diego, Calif.      | None                                       | None                                      | Jan. 20   | ( <sup>2</sup> ) | Dec. 26       | ( <sup>2</sup> )      | ( <sup>2</sup> )   |
| San Francisco, Calif.  | None                                       | None                                      | Mar. 28   | Jan. 13          | Dec. 4        | Dec. 29               | 350  |

<sup>1</sup> Temperature 32° F. or below.<sup>2</sup> Frosts do not occur every year.

TABLE 498.—*Monthly and annual rainfall by States, 1934*

| State                          | Jan.       | Feb.       | Mar.       | Apr.       | May        | June       | July       | Aug.       | Sept.      | Oct.       | Nov.       | Dec.       | Annual     |
|--------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                | <i>In.</i> | <i>In.</i> | <i>In.</i> | <i>In.</i> | <i>In.</i> | <i>In.</i> | <i>In.</i> | <i>In.</i> | <i>In.</i> | <i>In.</i> | <i>In.</i> | <i>In.</i> | <i>In.</i> |
| Alabama.....                   | 3.71       | 4.73       | 6.10       | 3.68       | 3.91       | 4.79       | 6.56       | 6.01       | 2.02       | 6.45       | 3.87       | 3.41       | 55.23      |
| Arizona.....                   | .33        | .80        | .25        | .57        | .54        | .19        | 1.25       | 3.17       | .58        | .09        | .86        | 1.71       | 10.34      |
| Arkansas.....                  | 2.86       | 2.00       | 6.63       | 3.51       | 3.36       | 2.88       | 1.66       | 2.75       | 5.46       | .79        | 6.89       | 3.78       | 42.47      |
| California.....                | 2.08       | 3.67       | .30        | .52        | .73        | .74        | .05        | .11        | .33        | 1.95       | 3.90       | 3.20       | 17.95      |
| Colorado.....                  | 1.22       | 1.62       | .49        | .93        | 1.35       | .94        | 1.11       | 1.59       | 1.11       | .10        | .83        | .60        | 10.89      |
| Florida.....                   | 1.49       | 3.85       | 3.39       | 4.12       | 6.81       | 10.22      | 7.30       | 5.40       | 4.59       | 3.64       | 1.52       | 1.00       | 53.33      |
| Georgia.....                   | 2.61       | 4.14       | 5.31       | 3.99       | 5.45       | 5.08       | 4.69       | 5.14       | 2.57       | 4.21       | 1.77       | 2.64       | 47.60      |
| Idaho.....                     | 2.24       | .99        | 1.83       | .82        | .61        | 1.43       | .23        | .21        | .56        | 1.87       | 2.46       | 2.03       | 15.38      |
| Illinois.....                  | 1.18       | .89        | 2.34       | 1.81       | 1.06       | 3.03       | 3.27       | 3.79       | 6.84       | 1.06       | 5.71       | 1.74       | 33.12      |
| Indiana.....                   | 1.38       | .85        | 2.97       | 1.65       | 1.14       | 3.55       | 2.42       | 4.68       | 5.67       | .53        | 2.87       | 2.00       | 29.72      |
| Iowa.....                      | .83        | .47        | 1.09       | 1.07       | 1.02       | 3.49       | 3.86       | 2.84       | 5.07       | 1.52       | 5.03       | .57        | 26.86      |
| Kansas.....                    | .43        | 1.15       | .70        | 1.27       | 2.82       | 2.73       | 1.13       | 1.82       | 4.18       | 1.29       | 2.58       | .42        | 20.02      |
| Kentucky.....                  | 1.85       | 2.20       | 4.83       | 2.14       | 1.67       | 4.58       | 4.34       | 4.76       | 4.82       | .88        | 2.58       | 2.18       | 37.10      |
| Louisiana.....                 | 6.86       | 4.72       | 6.17       | 3.19       | 5.38       | 4.80       | 5.00       | 5.44       | 3.57       | 2.19       | 8.00       | 3.91       | 59.23      |
| Maryland and Delaware.....     | 2.49       | 2.94       | 4.45       | 2.65       | 4.85       | 3.25       | 3.41       | 4.99       | 9.33       | 1.35       | 3.57       | 1.75       | 46.03      |
| Michigan.....                  | 1.23       | .62        | 1.84       | 1.98       | 1.23       | 2.18       | 1.46       | 2.47       | 5.14       | 1.97       | 3.88       | 1.59       | 25.59      |
| Minnesota.....                 | .55        | .24        | .71        | 1.12       | .99        | 4.02       | 2.24       | 2.07       | 3.41       | 2.60       | 1.43       | .95        | 20.33      |
| Mississippi.....               | 3.37       | 4.88       | 5.96       | 2.39       | 3.64       | 5.65       | 4.76       | 3.91       | 4.00       | 2.60       | 7.74       | 4.53       | 53.43      |
| Missouri.....                  | 1.24       | 1.27       | 2.36       | 2.41       | 1.89       | 2.85       | 1.11       | 3.90       | 7.39       | 2.45       | 5.68       | 1.66       | 34.21      |
| Montana.....                   | .72        | .28        | 1.27       | .49        | .67        | 2.99       | .74        | .33        | 1.13       | 1.14       | .55        | .91        | 11.22      |
| Nebraska.....                  | .29        | .85        | .72        | .54        | 1.06       | 3.07       | 1.11       | 1.67       | 2.51       | .91        | 1.22       | .49        | 14.44      |
| Nevada.....                    | .47        | .93        | .45        | .43        | .37        | .91        | .20        | .30        | .27        | .82        | 1.06       | .92        | 7.13       |
| New Jersey.....                | 2.55       | 2.77       | 3.81       | 3.89       | 4.63       | 3.68       | 3.65       | 3.61       | 9.00       | 2.49       | 2.91       | 2.90       | 45.89      |
| New Mexico.....                | .21        | .58        | .47        | .49        | 1.16       | .52        | 1.34       | 2.57       | .91        | .55        | .81        | .47        | 10.08      |
| New York.....                  | 2.80       | 1.69       | 2.83       | 3.41       | 2.16       | 3.54       | 2.88       | 2.38       | 5.38       | 2.48       | 2.77       | 2.79       | 35.11      |
| North Carolina.....            | 2.17       | 3.96       | 5.94       | 3.60       | 4.54       | 4.89       | 6.63       | 5.63       | 6.12       | 2.43       | 4.98       | 2.85       | 53.74      |
| North Dakota.....              | .20        | .06        | .49        | .44        | .35        | 3.04       | 1.22       | 1.15       | .96        | 1.01       | .28        | .30        | 9.50       |
| Ohio.....                      | 1.55       | 1.03       | 2.81       | 2.25       | .79        | 3.52       | 2.64       | 4.20       | 3.82       | .89        | 1.92       | 1.44       | 26.56      |
| Oklahoma.....                  | 1.75       | 1.20       | 1.78       | 2.64       | 2.62       | 2.45       | .64        | 2.57       | 6.13       | 1.33       | 3.63       | .72        | 27.46      |
| Oregon.....                    | 3.81       | 1.27       | 2.40       | 1.46       | .89        | 1.53       | .15        | .26        | .63        | 3.29       | 5.66       | 4.22       | 25.87      |
| Pennsylvania.....              | 2.54       | 1.31       | 2.96       | 3.06       | 2.51       | 3.64       | 4.01       | 4.94       | 6.58       | 1.46       | 3.61       | 2.55       | 39.17      |
| South Carolina.....            | 1.88       | 3.83       | 4.28       | 3.03       | 5.58       | 4.92       | 4.46       | 5.02       | 3.55       | 3.63       | 2.73       | 2.74       | 45.65      |
| South Dakota.....              | .25        | .17        | .96        | .50        | .69        | 3.35       | 1.88       | 1.32       | 2.11       | 1.27       | .47        | .80        | 13.27      |
| Tennessee.....                 | 2.91       | 2.94       | 3.13       | 2.35       | 2.81       | 5.25       | 4.42       | 4.85       | 4.35       | 2.38       | 4.10       | 2.85       | 47.34      |
| Texas.....                     | 3.72       | 1.67       | 3.85       | 3.14       | 1.83       | .81        | 1.96       | 1.27       | 2.79       | .42        | 3.95       | 1.82       | 26.78      |
| Utah.....                      | .79        | 1.41       | .39        | .42        | .37        | .51        | .65        | .99        | .46        | .58        | 1.75       | 1.20       | 9.52       |
| Virginia.....                  | 1.62       | 3.53       | 5.13       | 2.76       | 4.11       | 3.53       | 5.07       | 4.43       | 6.83       | 1.54       | 4.46       | 2.63       | 45.69      |
| Washington.....                | 7.13       | 1.84       | 3.99       | 1.42       | 1.97       | .67        | .72        | .54        | 1.77       | 5.07       | 7.25       | 6.20       | 38.27      |
| West Virginia.....             | 2.75       | 1.86       | 4.28       | 2.58       | 2.08       | 3.45       | 4.56       | 5.37       | 4.19       | 1.01       | 3.30       | 2.20       | 37.61      |
| Wisconsin.....                 | .85        | .35        | 1.50       | 1.96       | 1.47       | 4.02       | 2.83       | 2.76       | 6.05       | 2.31       | 5.15       | 1.29       | 30.66      |
| Wyoming.....                   | .52        | .70        | .90        | 1.32       | .52        | 1.83       | 1.10       | .68        | 1.14       | .79        | .64        | .74        | 10.87      |
| New England <sup>1</sup> ..... | 3.81       | 2.92       | 2.99       | 4.62       | 2.94       | 4.49       | 3.17       | 2.36       | 6.93       | 2.96       | 3.29       | 3.34       | 43.02      |

<sup>1</sup> Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut.

Weather Bureau.

TABLE 499.—*National forest areas, by regions, June 30, 1934*

| Region | Name                       | Region headquarters       | Gross area   | Alienated lands | Net area     |
|--------|----------------------------|---------------------------|--------------|-----------------|--------------|
|        |                            |                           | <i>Acres</i> | <i>Acres</i>    | <i>Acres</i> |
| 1      | Northern region.....       | Missoula, Mont.....       | 28,590,236   | 3,768,837       | 22,791,449   |
| 2      | Rocky Mountain region..... | Denver, Colo.....         | 21,214,607   | 1,831,473       | 19,383,134   |
| 3      | Southwestern region.....   | Albuquerque, N. Mex.....  | 22,017,681   | 2,085,575       | 19,932,106   |
| 4      | Intermountain region.....  | Ogden, Utah.....          | 30,783,865   | 1,594,189       | 29,189,676   |
| 5      | California region.....     | San Francisco, Calif..... | 24,210,342   | 4,857,503       | 19,352,839   |
| 6      | North Pacific region.....  | Portland, Oreg.....       | 26,914,005   | 3,792,889       | 23,121,116   |
| 7      | Eastern region.....        | Washington, D. C.....     | 3,605,727    | 1,764,383       | 1,841,344    |
| 8      | Southern region.....       | Atlanta, Ga.....          | 6,799,717    | 3,346,787       | 3,452,930    |
| 9      | North Central region.....  | Milwaukee, Wis.....       | 4,533,860    | 2,349,630       | 2,184,230    |
| 10     | Alaska region.....         | Juneau, Alaska.....       | 21,396,933   | 54,633          | 21,342,300   |
|        | Total.....                 |                           | 188,037,023  | 25,445,899      | 162,591,124  |

Headquarters of national forests:

Region 1: Federal Building, Missoula, Mont.; embracing Montana, northeastern Washington, northern Idaho, and northwestern South Dakota.

Region 2: Post Office Building, Denver, Colo.; embracing Colorado, eastern Wyoming, South Dakota, Nebraska, and western Oklahoma.

Region 3: Federal Building, Albuquerque, N. Mex.; embracing Arizona and New Mexico.

Region 4: Forest Service Building, Ogden, Utah; embracing Utah, southern Idaho, western Wyoming, and Nevada.

Region 5: Federal Building, Portland, Oreg.; embracing Oregon, Washington, and western Idaho.

Region 6: Federal Building, San Francisco, Calif.; embracing California, Nevada, and western Oregon.

Region 7: Federal Building, Washington, D. C.; embracing Virginia, West Virginia, Maryland, Delaware, Pennsylvania, Puerto Rico, Vermont, Virginia, and West Virginia.

Region 8: Glenn Building, Atlanta, Ga.; embracing Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, eastern Oklahoma, South Carolina, Tennessee, Texas, and portion of Virginia.

Region 9: Federal Building, Milwaukee, Wis.; embracing Illinois, Michigan, Minnesota, Missouri, and Wisconsin.

Region 10: Federal and Territorial Building, Juneau, Alaska; located in Alaska.

Forest Service; see 1931 Yearbook, table 554, for lists of national monuments, national game refuges, and range reserves. For later information, address the Forest Service, Washington, D. C.

TABLE 500.—*Saw-timber area, stand, growth, and depletion in the United States*

| Region                                   | Area                      | Stand <sup>1</sup>           | Annual growth <sup>2</sup>   | Annual depletion             |  |  |                              |
|--|---------------------------|------------------------------|------------------------------|------------------------------|--|--|------------------------------|
|  |                           |                              |                              | Cut <sup>3</sup>             | De-<br>stroyed<br>by fire <sup>4</sup> | Other<br>destruc-<br>tion <sup>5</sup> | Total                        |
|  | <i>Thousand<br/>acres</i> | <i>Million<br/>ft. b. m.</i> | <i>Million<br/>ft. b. m.</i> | <i>Million<br/>ft. b. m.</i> | <i>Million<br/>ft. b. m.</i>           | <i>Million<br/>ft. b. m.</i>           | <i>Million<br/>ft. b. m.</i> |
| New England.....                         | 13,860                    | 57,875                       | 764                          | 1,648                        | 2                                      | 255                                    | 1,905                        |
| Middle Atlantic <sup>6</sup> .....       | 7,294                     | 26,150                       | 575                          | 1,061                        | 7                                      | 14                                     | 1,082                        |
| Lake.....                                | 5,095                     | 35,887                       | 116                          | 2,709                        | 4                                      | 35                                     | 2,748                        |
| Central <sup>7</sup> .....               | 21,224                    | 34,622                       | 727                          | 5,454                        | 12                                     | 59                                     | 5,525                        |
| South <sup>8</sup> .....                 | 57,265                    | 199,297                      | 6,799                        | 25,233                       | 395                                    | 711                                    | 26,339                       |
| Eastern regions.....                     | 104,738                   | 353,831                      | 8,981                        | 36,105                       | 420                                    | 1,074                                  | 37,599                       |
| Pacific coast.....                       | 44,140                    | 1,041,628                    | 1,785                        | 16,487                       | 564                                    | 1,749                                  | 18,800                       |
| North Rocky Mountain <sup>9</sup> .....  | 17,026                    | 146,388                      | 576                          | 1,510                        | 393                                    | 474                                    | 2,377                        |
| South Rocky Mountain <sup>10</sup> ..... | 22,741                    | 125,956                      | 389                          | 540                          | 13                                     | 105                                    | 658                          |
| Western regions.....                     | 83,907                    | 1,313,972                    | 2,750                        | 18,537                       | 970                                    | 2,328                                  | 21,835                       |
| Total.....                               | 188,645                   | 1,667,803                    | 11,731                       | 54,642                       | 1,390                                  | 3,402                                  | 59,434                       |

<sup>1</sup> Standing timber of all species of size suitable for lumber, according to the local practice in each region as of 1930.

<sup>2</sup> Current annual growth of timber of saw-timber size.

<sup>3</sup> Cut for lumber and other commodities, averaged for the period 1925-29.

<sup>4</sup> Saw timber destroyed, averaged for the period 1925-29.

<sup>5</sup> Destruction due to insects, disease, windfall, etc., averaged for the period 1919-29.

<sup>6</sup> Includes New York, Pennsylvania, New Jersey, Delaware, and Maryland.

<sup>7</sup> Includes Ohio, Indiana, Illinois, Iowa, Kansas, Missouri, Nebraska, Tennessee, Kentucky, and West Virginia.

<sup>8</sup> Includes the coastwise States, Virginia to Texas, inclusive; also Arkansas and Oklahoma.

<sup>9</sup> Includes Idaho and Montana.

<sup>10</sup> Includes the other Rocky Mountain States and South Dakota (Black Hills).

Forest Service; from a National Plan for American Forestry, 1933.

TABLE 501.—*Production of lumber, by States, 1929 and 1931-33*

| State              | 1929                         | 1931                         | 1932                         | 1933                         | State               | 1929                         | 1931                         | 1932                         | 1933                         |
|--------------------|------------------------------|------------------------------|------------------------------|------------------------------|---------------------|------------------------------|------------------------------|------------------------------|------------------------------|
|                    | <i>Million<br/>ft. b. m.</i> | <i>Million<br/>ft. b. m.</i> | <i>Million<br/>ft. b. m.</i> | <i>Million<br/>ft. b. m.</i> |                     | <i>Million<br/>ft. b. m.</i> | <i>Million<br/>ft. b. m.</i> | <i>Million<br/>ft. b. m.</i> | <i>Million<br/>ft. b. m.</i> |
| Alabama.....       | 2,059                        | 732                          | 544                          | 757                          | New Jersey.....     | 16                           | 7                            | 5                            | 5                            |
| Arizona.....       | 175                          | 85                           | 58                           | 90                           | New Mexico.....     | 148                          | 59                           | 72                           | 89                           |
| Arkansas.....      | 1,348                        | 508                          | 277                          | 514                          | New York.....       | 160                          | 74                           | 39                           | 36                           |
| California.....    | <sup>1</sup> 2,083           | 958                          | <sup>1</sup> 681             | 785                          | North Carolina..... | 1,202                        | 501                          | 383                          | 513                          |
| Colorado.....      | 71                           | 48                           | 39                           | 34                           | Ohio.....           | 176                          | 53                           | 32                           | 38                           |
| Connecticut.....   | 30                           | 13                           | 5                            | 7                            | Oklahoma.....       | 200                          | 77                           | 65                           | 105                          |
| Delaware.....      | 10                           | 4                            | 4                            | 1                            | Oregon.....         | 4,784                        | 2,628                        | 1,604                        | 2,256                        |
| Florida.....       | 1,137                        | 577                          | 320                          | 439                          | Pennsylvania.....   | 314                          | 123                          | 73                           | 93                           |
| Georgia.....       | 1,386                        | 480                          | 264                          | 473                          | Rhode Island.....   | 6                            | 3                            | 3                            | 3                            |
| Idaho.....         | <sup>1</sup> 1,029           | 500                          | 248                          | 316                          | South Carolina..... | 1,068                        | 450                          | 354                          | 422                          |
| Illinois.....      | 58                           | 18                           | 8                            | 9                            | South Dakota.....   | 61                           | 27                           | 17                           | 30                           |
| Indiana.....       | 170                          | 53                           | 27                           | 42                           | Tennessee.....      | 784                          | 263                          | 128                          | 169                          |
| Kentucky.....      | 339                          | 111                          | 51                           | 47                           | Texas.....          | 1,452                        | 556                          | 405                          | 594                          |
| Louisiana.....     | 2,232                        | 949                          | 507                          | 836                          | Utah.....           | 5                            | 6                            | 5                            | 8                            |
| Maine.....         | 258                          | 152                          | 102                          | 105                          | Vermont.....        | 120                          | 61                           | 40                           | 30                           |
| Maryland.....      | 55                           | 29                           | 18                           | 11                           | Virginia.....       | 708                          | 311                          | 227                          | 320                          |
| Massachusetts..... | 72                           | 43                           | 39                           | 24                           | Washington.....     | 7,302                        | 3,908                        | 2,261                        | 3,106                        |
| Michigan.....      | 571                          | 287                          | 111                          | 160                          | West Virginia.....  | 653                          | 247                          | 135                          | 185                          |
| Minnesota.....     | 357                          | 95                           | 58                           | 49                           | Wisconsin.....      | 843                          | 390                          | 120                          | 186                          |
| Mississippi.....   | 2,669                        | 863                          | 531                          | 792                          | Wyoming.....        | 26                           | 17                           | 21                           | 11                           |
| Missouri.....      | 228                          | 75                           | 35                           | 41                           | All other.....      | <sup>1</sup> 20              | <sup>1</sup> 10              | <sup>1</sup> 5               | <sup>1</sup> 4               |
| Montana.....       | 389                          | 158                          | 111                          | 125                          |                     |                              |                              |                              |                              |
| New Hampshire..... | 192                          | 94                           | 61                           | 101                          | Total.....          | <sup>1</sup> 36,886          | <sup>1</sup> 16,523          | <sup>1</sup> 10,151          | <sup>1</sup> 13,960          |

<sup>1</sup> Includes the cut of Nevada.

<sup>2</sup> Includes the cut of Iowa, Kansas, and Nebraska.

<sup>3</sup> Mills cutting less than 50,000 feet each year excluded.

Forest Service, in cooperation with the Bureau of the Census.

TABLE 502.—*Stumpage: Prices per 1,000 feet, log scale, 1933*

## SOFTWOODS

| State          | Pine               |                                      |                        | Douglas<br>fir | Firs<br>(true) <sup>2</sup> | Spruce <sup>4</sup> | Hem-<br>lock <sup>5</sup> | Cypress | Cedar <sup>6</sup> |
|----------------|--------------------|--------------------------------------|------------------------|----------------|-----------------------------|---------------------|---------------------------|---------|--------------------|
|                | White <sup>1</sup> | South-<br>ern<br>yellow <sup>2</sup> | West-<br>ern<br>yellow |                |                             |                     |                           |         |                    |
| Alabama        |                    | \$3. 47                              |                        |                |                             |                     |                           |         | \$7. 17            |
| Arizona        |                    |                                      | \$2. 39                |                |                             |                     |                           |         |                    |
| Arkansas       |                    | 2. 72                                |                        |                |                             |                     |                           | \$2. 38 |                    |
| California     | \$3. 27            |                                      | 2. 44                  | \$1. 60        | \$0. 59                     |                     |                           | 7 1. 98 | . 77               |
| Colorado       |                    |                                      | 1. 98                  | 2. 23          | 2. 00                       | \$2. 27             |                           |         |                    |
| Connecticut    | 4. 80              |                                      |                        |                |                             |                     | \$3. 31                   |         |                    |
| Florida        |                    | 5. 04                                |                        |                |                             |                     |                           | 4. 71   |                    |
| Georgia        |                    | 2. 23                                |                        |                |                             |                     |                           | 4. 72   |                    |
| Idaho          | 6. 72              |                                      | 2. 09                  | . 70           | 1. 00                       | 1. 00               |                           |         | 1. 00              |
| Kentucky       |                    |                                      |                        |                |                             |                     |                           |         | 9. 00              |
| Louisiana      |                    | 3. 38                                |                        |                |                             |                     |                           | 3. 98   |                    |
| Maine          | 3. 94              |                                      |                        |                | 4. 00                       | 4. 19               | 3. 78                     |         | 6. 50              |
| Maryland       |                    | 4. 51                                |                        |                |                             |                     |                           |         |                    |
| Massachusetts  | 5. 45              |                                      |                        |                |                             |                     | 4. 63                     |         | 3. 00              |
| Michigan       | 7. 77              |                                      |                        |                | 1. 34                       | 5. 00               | 1. 82                     |         | 1. 72              |
| Minnesota      | 3. 83              |                                      |                        |                | . 75                        | 1. 87               |                           |         |                    |
| Mississippi    |                    | 3. 50                                |                        |                |                             |                     |                           | 6. 64   |                    |
| Missouri       |                    | 3. 35                                |                        |                |                             |                     |                           | 4. 55   |                    |
| Montana        |                    |                                      | 2. 19                  | . 60           |                             |                     |                           |         |                    |
| New Hampshire  | 4. 92              |                                      |                        |                |                             | 3. 71               | 4. 00                     |         |                    |
| New Mexico     |                    |                                      | 2. 25                  | 1. 00          |                             |                     |                           |         |                    |
| New York       | 7. 49              |                                      |                        |                |                             | 10. 00              | 4. 93                     |         |                    |
| North Carolina | 3. 69              | 3. 58                                |                        |                |                             |                     | . 75                      | 3. 32   | 1. 00              |
| Oklahoma       |                    | 2. 02                                |                        |                |                             |                     |                           |         |                    |
| Oregon         | 3. 27              |                                      | 2. 78                  | 1. 35          | 1. 52                       | 2. 12               | . 63                      |         | 7. 74              |
| Pennsylvania   | 4. 69              |                                      |                        |                |                             |                     | 5. 67                     |         |                    |
| Rhode Island   | 5. 00              |                                      |                        |                |                             |                     |                           |         |                    |
| South Carolina |                    | 2. 96                                |                        |                |                             |                     |                           |         |                    |
| South Dakota   |                    |                                      | 3. 27                  |                |                             |                     |                           |         |                    |
| Tennessee      | 4. 32              | 3. 03                                |                        |                |                             |                     |                           | 3. 00   | 12. 72             |
| Texas          |                    | 3. 08                                |                        |                |                             |                     |                           |         |                    |
| Utah           |                    |                                      | 2. 50                  |                |                             |                     |                           |         |                    |
| Vermont        | 3. 48              |                                      |                        |                |                             | 5. 63               | 2. 50                     |         |                    |
| Virginia       | 4. 00              | 3. 37                                |                        |                |                             |                     | 3. 00                     |         |                    |
| Washington     | 3. 68              |                                      | 2. 03                  | 2. 69          | . 53                        | 3. 15               | 1. 00                     |         | 2. 82              |
| West Virginia  |                    | 5. 00                                |                        |                |                             |                     | . 84                      |         |                    |
| Wisconsin      | 8. 25              |                                      |                        |                | 1. 11                       | 2. 56               | 2. 66                     |         | 2. 00              |
| Wyoming        |                    |                                      | 2. 74                  |                |                             |                     |                           |         |                    |

<sup>1</sup> Northern white pine in States east of the Great Plains. Western white pine in Idaho, Montana, and Washington. Sugar pine in Oregon and California.

<sup>2</sup> Includes all sales of southern pines.

<sup>3</sup> Balsam fir in Eastern and Lake States. White fir in Western States.

<sup>4</sup> Red, black, and white spruce in Eastern States. Sitka spruce in California, Oregon, and Washington, Engelmann spruce in Colorado, Idaho, Utah, and Wyoming.

<sup>5</sup> Eastern and western hemlock for Eastern and Western States, respectively.

<sup>6</sup> Northern white cedar in Northeastern and Lake States. Port Orford cedar in Oregon. Eastern red cedar in Alabama, North Carolina, and Tennessee. Incense cedar in California. Western red cedar in other States.

<sup>7</sup> Redwood.

TABLE 502.—*Stumpage: Prices per 1,000 feet, log scale, 1933*—Continued

## HARDWOODS

|                     | Oak    | Maple  | Elm    | Gum    | Cotton-<br>wood s | Yellow<br>poplar | Birch  | Bass-<br>wood | Hick-<br>ory | Beech  |
|---------------------|--------|--------|--------|--------|-------------------|------------------|--------|---------------|--------------|--------|
| Alabama.....        | \$4.05 |        |        | \$2.13 | \$6.00            | \$7.94           |        |               | \$2.00       | \$3.00 |
| Arkansas.....       | 3.74   | \$3.00 | \$4.00 | 2.59   | 4.05              |                  |        |               | 3.38         |        |
| Connecticut.....    | 4.29   | 4.00   |        |        |                   |                  |        | \$4.66        |              |        |
| Florida.....        | 1.88   | .93    |        | 1.09   |                   |                  |        |               | 6.87         |        |
| Georgia.....        | 2.96   |        |        | 2.50   |                   | 2.50             |        |               |              |        |
| Illinois.....       | 5.80   |        | 3.00   |        | 3.83              | 15.00            |        | 12.00         |              |        |
| Indiana.....        | 13.91  | 11.94  | 9.73   | 8.08   | 5.18              | 10.64            |        | 16.13         | 12.24        | 5.82   |
| Kentucky.....       | 5.37   |        |        | 4.00   |                   | 10.25            |        | 4.00          | 9.42         | 4.13   |
| Louisiana.....      | 4.55   |        |        | 3.31   | 6.00              |                  |        |               | 4.75         | 1.50   |
| Maine.....          | 10.00  | 4.00   | 5.00   |        | 5.00              |                  | \$5.32 |               |              |        |
| Maryland.....       | 5.41   |        |        |        |                   | 5.00             |        |               |              |        |
| Massachusetts.....  | 4.00   |        |        |        |                   |                  | 6.82   | 6.88          |              | 4.53   |
| Michigan.....       | 9.31   | 5.60   | 5.14   |        | 2.00              |                  | 4.00   | 3.00          |              |        |
| Minnesota.....      | 4.62   |        |        |        | 1.56              |                  |        |               |              |        |
| Mississippi.....    | 3.53   |        |        | 3.04   | 3.87              | 2.17             |        |               | 7.07         |        |
| Missouri.....       | 2.01   | 3.00   |        | 3.00   |                   |                  | 3.60   |               | 2.00         |        |
| New Hampshire.....  | 7.50   | 5.46   |        |        |                   |                  | 4.34   |               |              |        |
| New Jersey.....     | 10.00  |        |        |        |                   |                  |        |               |              |        |
| New York.....       | 5.57   | 7.01   |        |        |                   |                  | 7.00   | 5.05          |              | 4.44   |
| North Carolina..... | 3.20   | 4.93   |        | 2.80   |                   | 3.49             |        |               |              |        |
| Ohio.....           | 8.53   | 9.68   | 9.22   | 2.00   | 5.67              | 13.47            |        | 7.57          | 8.92         | 4.79   |
| Oklahoma.....       | 6.81   |        |        |        |                   |                  |        |               |              |        |
| Oregon.....         |        | 2.57   |        |        | 1.12              |                  |        |               |              |        |
| Pennsylvania.....   | 5.51   | 3.68   | 8.00   |        |                   | 5.10             | 2.67   | 12.00         | 3.03         | 3.20   |
| Rhode Island.....   | 4.00   |        |        |        |                   |                  |        |               |              |        |
| South Carolina..... | 4.28   |        |        | 3.78   |                   |                  |        |               |              |        |
| Tennessee.....      | 4.88   |        | 5.00   | 6.12   |                   | 5.15             |        |               | 6.00         |        |
| Texas.....          | 4.41   |        |        | 2.00   |                   |                  |        |               |              |        |
| Vermont.....        |        | 5.24   |        |        |                   |                  | 5.00   |               |              | 3.00   |
| Virginia.....       | 4.80   |        |        | 2.97   |                   | 4.72             |        |               |              |        |
| Washington.....     | 5.00   | 1.81   |        |        | 1.00              |                  |        |               |              |        |
| West Virginia.....  | 4.21   | 3.00   |        |        |                   | 5.12             |        | 2.64          |              | .91    |
| Wisconsin.....      | 7.42   | 5.68   | 5.76   |        | 3.50              |                  | 7.12   | 5.83          |              | 1.00   |

\* Includes aspen.

Forest Service, in cooperation with the Bureau of the Census.

TABLE 503.—Logs: Prices per 1,000 feet, log scale, f. o. b. manufacturing plant  
1933

## SOFTWOODS

| State               | Pine               |                                 |                   | Douglas<br>fir | Firs<br>(true) <sup>3</sup> | Spruce <sup>4</sup> | Hem-<br>lock <sup>5</sup> | Cypress | Cedar <sup>6</sup> |
|---------------------|--------------------|---------------------------------|-------------------|----------------|-----------------------------|---------------------|---------------------------|---------|--------------------|
|                     | White <sup>1</sup> | Southern<br>yellow <sup>2</sup> | Western<br>yellow |                |                             |                     |                           |         |                    |
| Alabama.....        |                    | \$9.29                          |                   |                |                             |                     |                           | \$10.85 | \$24.16            |
| Arkansas.....       |                    | 8.83                            |                   |                |                             |                     |                           | 10.56   |                    |
| California.....     |                    |                                 | \$10.46           | \$10.72        | \$6.55                      | \$12.00             |                           | 7 7.34  | 7.92               |
| Florida.....        |                    | 11.21                           |                   |                |                             |                     |                           | 17.25   |                    |
| Georgia.....        |                    | 9.21                            |                   |                |                             |                     |                           | 16.56   |                    |
| Idaho.....          | \$13.42            |                                 | 7.43              | 13.13          | 7.40                        |                     |                           |         | 7.38               |
| Indiana.....        |                    | 10.57                           |                   |                |                             |                     |                           |         |                    |
| Kentucky.....       |                    |                                 |                   |                |                             |                     |                           |         | 35.70              |
| Louisiana.....      |                    | 11.29                           |                   |                |                             |                     |                           | 11.85   |                    |
| Maine.....          | 12.66              |                                 |                   |                | 13.63                       | 12.88               | \$11.50                   |         | 14.64              |
| Massachusetts.....  | 9.89               |                                 |                   |                |                             |                     | 11.00                     |         |                    |
| Michigan.....       | 15.05              |                                 |                   |                | 15.48                       | 20.37               | 11.61                     |         | 9.00               |
| Minnesota.....      | 21.13              |                                 |                   |                | 7.00                        |                     |                           |         |                    |
| Mississippi.....    |                    | 7.91                            |                   |                |                             |                     |                           | 12.45   |                    |
| Missouri.....       |                    | 6.18                            |                   |                |                             |                     |                           | 10.78   |                    |
| Montana.....        | 13.21              |                                 | 17.45             | 24.79          |                             | 10.00               |                           |         |                    |
| New Hampshire.....  | 10.89              |                                 |                   |                |                             | 11.51               | 10.62                     |         |                    |
| New York.....       | 13.91              |                                 |                   |                |                             | 13.95               | 14.45                     |         |                    |
| North Carolina..... | 10.00              | 9.57                            |                   |                |                             |                     | 8.74                      | 12.45   |                    |
| Oklahoma.....       |                    | 6.10                            |                   |                |                             |                     |                           |         |                    |
| Oregon.....         | 9.96               |                                 | 9.14              | 9.83           | 7.35                        | 10.36               | 7.81                      |         | 9.87               |
| Pennsylvania.....   | 13.34              | 24.00                           |                   |                |                             |                     | 13.49                     |         |                    |
| South Carolina..... |                    | 9.16                            |                   |                |                             |                     |                           | 11.84   |                    |
| South Dakota.....   |                    |                                 | 15.16             |                |                             |                     |                           |         |                    |
| Tennessee.....      | 13.07              | 6.74                            |                   |                |                             |                     | 10.00                     | 13.07   | 21.53              |
| Texas.....          |                    | 9.66                            |                   |                |                             |                     |                           | 11.40   |                    |
| Utah.....           |                    |                                 | 9.00              |                |                             |                     |                           |         |                    |
| Vermont.....        | 10.59              |                                 |                   |                | 10.00                       | 14.00               | 10.91                     |         |                    |
| Virginia.....       | 10.00              | 10.03                           |                   |                |                             |                     |                           | 17.04   | 46.67              |
| Washington.....     | 13.87              |                                 | 8.74              | 11.10          | 10.06                       | 10.41               | 7.79                      |         | 11.04              |
| Wisconsin.....      | 15.31              |                                 |                   |                | 8.49                        | 12.25               | 12.81                     |         | 8.00               |

<sup>1</sup> Western white pine in Idaho, Montana, and Washington. Sugar pine in Oregon. Northern white pine in other States.

<sup>2</sup> Includes all sales of southern pines.

<sup>3</sup> White fir in California, Idaho, Oregon, and Washington. Balsam fir in other States.

<sup>4</sup> Engelmann spruce in Colorado and Montana. Sitka spruce in California, Oregon, and Washington. Eastern spruce in other States.

<sup>5</sup> Eastern and western hemlock for Eastern and Western States, respectively.

<sup>6</sup> Western red cedar in Idaho, Oregon, and Washington. Northern white cedar in Maine, Wisconsin, and Michigan. Incense cedar in California. Eastern red cedar in other States.

<sup>7</sup> Redwood.

TABLE 503.—*Logs: Prices per 1,000 feet, log scale, f. o. b. manufacturing plant, 1933—Continued*

## HARDWOODS

|                     | Oak     | Maple   | Elm     | Gum     | Cotton-<br>wood <sup>s</sup> | Yellow<br>poplar | Birch   | Bass-<br>wood | Hick-<br>ory | Beech  |
|---------------------|---------|---------|---------|---------|------------------------------|------------------|---------|---------------|--------------|--------|
| Alabama.....        | \$12.44 |         |         | \$10.84 | \$10.52                      | \$14.07          |         |               | \$17.39      | \$8.13 |
| Arkansas.....       | 12.04   | \$11.58 | \$10.61 | 14.01   | 10.82                        | 9.50             |         | \$10.00       | 17.60        | 9.50   |
| Connecticut.....    | 20.95   | 29.00   |         |         |                              |                  |         |               |              |        |
| Florida.....        | 13.81   |         | 12.00   | 13.15   |                              |                  |         |               | 28.67        |        |
| Georgia.....        | 12.84   | 14.00   |         | 11.25   | 12.17                        | 12.61            |         |               |              |        |
| Illinois.....       | 24.22   | 13.00   | 13.69   | 13.03   | 11.62                        | 22.06            | \$12.78 | 20.62         | 16.00        |        |
| Indiana.....        | 29.33   | 27.02   | 12.21   | 24.94   | 13.55                        | 23.36            | 8.00    | 20.62         | 19.53        | 15.15  |
| Iowa.....           | 15.00   |         |         |         | 10.00                        |                  |         | 12.00         |              |        |
| Kentucky.....       | 24.07   | 29.92   | 10.00   | 25.16   | 17.50                        | 33.52            | 33.00   | 32.22         |              |        |
| Louisiana.....      | 13.60   | 10.00   | 10.01   | 11.95   | 9.88                         | 20.35            |         | 10.45         | 14.50        | 8.98   |
| Maine.....          | 19.80   |         |         |         |                              |                  | 17.62   | 15.00         |              |        |
| Maryland.....       | 13.38   |         |         |         |                              | 27.74            |         |               |              |        |
| Massachusetts.....  | 15.00   | 15.00   |         |         |                              |                  | 16.34   |               |              |        |
| Michigan.....       | 17.68   | 17.70   | 16.93   |         | 14.07                        |                  | 20.25   | 17.32         | 21.56        | 13.09  |
| Minnesota.....      | 14.09   |         |         |         | 9.69                         |                  |         | 10.50         |              |        |
| Mississippi.....    | 10.33   | 11.73   | 11.62   | 11.33   | 10.49                        | 12.75            |         | 10.83         | 14.90        | 10.42  |
| Missouri.....       | 11.45   | 6.00    | 13.12   | 7.11    | 10.00                        |                  |         |               | 12.33        |        |
| New Hampshire.....  | 15.82   | 21.05   |         |         |                              |                  | 23.00   |               |              | 11.00  |
| New Jersey.....     | 25.70   |         |         |         |                              |                  |         |               |              |        |
| New York.....       | 16.41   | 21.98   | 17.24   |         | 30.00                        |                  | 18.72   | 16.78         |              | 14.50  |
| North Carolina..... | 12.93   | 13.30   |         | 12.69   | 9.00                         | 17.55            |         |               | 20.00        |        |
| Ohio.....           | 18.81   | 21.19   | 22.27   | 17.00   | 7.00                         | 19.10            |         | 20.32         | 28.01        | 13.51  |
| Oklahoma.....       | 19.32   |         |         |         |                              |                  |         |               |              |        |
| Oregon.....         | 20.00   | 12.83   |         |         | 7.01                         |                  |         | 9.34          |              |        |
| Pennsylvania.....   | 16.54   | 18.89   | 16.97   | 13.77   |                              | 35.02            | 31.32   | 29.79         | 14.62        | 16.11  |
| Rhode Island.....   | 30.00   |         |         |         |                              |                  |         |               |              |        |
| South Carolina..... | 12.34   | 11.77   | 11.00   | 11.33   | 10.07                        | 10.49            |         |               |              |        |
| Tennessee.....      | 19.16   | 14.22   | 8.53    | 11.26   | 10.19                        | 15.78            |         | 10.75         | 22.80        | 9.85   |
| Texas.....          | 15.66   |         |         |         | 11.00                        |                  |         |               |              |        |
| Vermont.....        |         | 10.72   | 13.84   |         | 8.00                         |                  | 17.84   | 14.38         |              | 14.09  |
| Virginia.....       | 18.86   |         |         | 13.37   |                              | 17.36            |         |               |              |        |
| Washington.....     | 33.41   | 13.11   |         |         | 8.41                         |                  | 14.82   | 9.10          |              |        |
| West Virginia.....  | 27.31   |         |         |         |                              |                  |         |               |              |        |
| Wisconsin.....      | 27.98   | 18.57   | 15.70   |         | 10.09                        | 27.00            | 22.84   | 21.54         |              | 16.00  |

<sup>s</sup> Includes aspen.<sup>9</sup> Alder.

Forest Service, in cooperation with the Bureau of the Census.

TABLE 504.—*Average value of lumber at the mill per 1,000 feet board measure, in stated years*

| Kind of wood          | 1899             | 1909           | 1919           | 1927           | 1929           | 1930           | 1931           | 1932           | 1933           |
|-----------------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>Softwoods:</b>     | <i>Dollars</i>   | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> |
| Balsam fir.....       | ( <sup>1</sup> ) | 13.99          | 32.23          | 25.92          | 25.40          | 26.72          | 19.34          | 19.82          | 19.79          |
| Cedar.....            | 10.91            | 19.95          | 33.80          | 34.39          | 34.83          | 31.14          | 24.08          | 24.55          | 25.91          |
| Cypress.....          | 13.32            | 20.46          | 38.38          | 39.91          | 35.29          | 33.10          | 30.14          | 24.62          | 26.30          |
| Douglas fir.....      | 8.67             | 12.44          | 24.62          | 19.45          | 20.05          | 16.91          | 12.05          | 10.63          | 13.57          |
| Hemlock.....          | 9.98             | 13.95          | 29.16          | 19.06          | 18.90          | 17.04          | 14.13          | 12.39          | 14.27          |
| Larch (tamarack)..... | 8.73             | 12.68          | 23.39          | 17.69          | 18.35          | 17.18          | 14.18          | 10.76          | 13.34          |
| Lodgepole pine.....   | ( <sup>1</sup> ) | 16.25          | 29.98          | 20.82          | 17.97          | 17.64          | 14.46          | 12.45          | 16.23          |
| Redwood.....          | 10.12            | 14.80          | 30.04          | 33.81          | 31.00          | 30.33          | 29.82          | 24.33          | 26.29          |
| Spruce.....           | 11.27            | 16.91          | 30.76          | 26.59          | 28.64          | 23.66          | 23.00          | 17.73          | 18.89          |
| Sugar pine.....       | 12.30            | 18.14          | 35.99          | 43.22          | 43.08          | 38.10          | 28.76          | 26.26          | 27.95          |
| Ponderosa pine.....   | 9.70             | 15.39          | 27.75          | 26.04          | 26.47          | 23.52          | 20.48          | 16.88          | 18.57          |
| White fir.....        | ( <sup>1</sup> ) | 13.10          | 25.68          | 19.92          | 20.63          | 17.57          | 14.94          | 12.23          | 15.30          |
| White pine.....       | 12.69            | 18.16          | 32.83          | 29.90          | 29.87          | 27.81          | 24.71          | 21.68          | 21.45          |
| Yellow pine.....      | 8.46             | 12.69          | 28.71          | 23.77          | 25.66          | 21.06          | 16.99          | 13.82          | 17.91          |
| <b>Hardwoods:</b>     |                  |                |                |                |                |                |                |                |                |
| Ash.....              | 15.84            | 24.44          | 52.69          | 43.82          | 43.14          | 39.72          | 41.06          | 28.74          | 33.23          |
| Basswood.....         | 12.84            | 19.50          | 40.03          | 89.84          | 39.85          | 35.51          | 28.54          | 23.81          | 29.19          |
| Beech.....            | ( <sup>1</sup> ) | 13.25          | 29.98          | 27.21          | 28.39          | 25.89          | 22.93          | 17.97          | 22.75          |
| Birch.....            | 12.50            | 16.95          | 35.79          | 41.03          | 39.35          | 36.39          | 30.95          | 26.26          | 29.02          |
| Chestnut.....         | 13.37            | 16.12          | 32.30          | 29.35          | 29.31          | 23.91          | 22.50          | 17.87          | 23.01          |
| Cottonwood.....       | 10.37            | 18.05          | 32.24          | 30.92          | 29.70          | 22.73          | 19.54          | 16.49          | 22.18          |
| Elm.....              | 11.47            | 17.52          | 36.39          | 36.22          | 35.28          | 30.20          | 25.37          | 19.07          | 23.09          |
| Gum, red and sap..... | 9.63             | 13.20          | 32.68          | 32.81          | 34.42          | 27.67          | 22.68          | 16.84          | 23.01          |
| Hickory.....          | 13.78            | 30.80          | 44.37          | 37.08          | 40.33          | 36.00          | 32.65          | 29.55          | 26.27          |
| Maple.....            | 11.83            | 15.77          | 35.56          | 35.35          | 36.93          | 34.54          | 28.80          | 22.82          | 30.51          |
| Oak.....              | 13.78            | 20.50          | 37.87          | 35.72          | 38.43          | 29.29          | 27.68          | 22.54          | 26.53          |
| Sycamore.....         | 11.04            | 14.87          | 30.32          | 29.81          | 30.07          | 26.54          | 22.40          | 18.71          | 22.76          |
| Tupelo.....           | ( <sup>1</sup> ) | 11.87          | 28.42          | 24.45          | 25.39          | 23.47          | 19.05          | 17.40          | 22.01          |
| Walnut.....           | 36.49            | 43.79          | 72.13          | 111.64         | 119.15         | 100.75         | 90.44          | 57.87          | 77.61          |
| Yellow poplar.....    | 14.03            | 25.39          | 41.65          | 38.33          | 40.66          | 35.19          | 30.02          | 26.02          | 29.91          |
| <b>All kinds.....</b> | <b>11.13</b>     | <b>15.38</b>   | <b>30.21</b>   | <b>25.80</b>   | <b>26.94</b>   | <b>22.81</b>   | <b>18.56</b>   | <b>15.12</b>   | <b>18.55</b>   |

<sup>1</sup> No data available.

Forest Service, in cooperation with the Bureau of the Census.



TABLE 505.—*Pulpwood consumption, wood pulp and paper production by States, 1930-33*

| State                 | Pulpwood consumption |                  |                  |                  | Wood pulp production   |                        |                        |                        | Paper production       |                        |                        |                        |
|-----------------------|----------------------|------------------|------------------|------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|                       | 1930                 | 1931             | 1932             | 1933             | 1930                   | 1931                   | 1932                   | 1933                   | 1930                   | 1931                   | 1932                   | 1933                   |
|                       | 1,000<br>cords       | 1,000<br>cords   | 1,000<br>cords   | 1,000<br>cords   | 1,000<br>short<br>tons | 1,000<br>short<br>tons | 1,000<br>short<br>tons | 1,000<br>short<br>tons | 1,000<br>short<br>tons | 1,000<br>short<br>tons | 1,000<br>short<br>tons | 1,000<br>short<br>tons |
| California.....       | ( <sup>1</sup> )     |                  |                  |                  | ( <sup>1</sup> )       |                        |                        |                        | 231                    | 192                    | 139                    | 167                    |
| Louisiana.....        | 423                  | 431              | 449              | 534              | 244                    | 261                    | 289                    | 383                    | 278                    | 295                    | 324                    | 394                    |
| Maine.....            | 1,203                | 1,112            | 949              | 980              | 905                    | 889                    | 765                    | 779                    | 1,029                  | 956                    | 830                    | 837                    |
| Massachusetts.....    | 43                   | 33               | 20               | 20               | 29                     | 24                     | 14                     | 12                     | 491                    | 406                    | 328                    | 350                    |
| Michigan.....         | 280                  | 251              | 216              | 252              | 193                    | 150                    | 153                    | 154                    | 991                    | 903                    | 734                    | 893                    |
| Minnesota.....        | 230                  | 198              | 211              | 235              | 182                    | 148                    | 134                    | 154                    | 279                    | 241                    | 208                    | 233                    |
| New Hampshire.....    | 243                  | 151              | ( <sup>2</sup> ) | 155              | 138                    | 90                     | ( <sup>2</sup> )       | 79                     | 158                    | 130                    | 117                    | 134                    |
| New York.....         | 763                  | 583              | 438              | 479              | 596                    | 467                    | 354                    | 394                    | 1,348                  | 1,160                  | 912                    | 993                    |
| Ohio.....             | ( <sup>2</sup> )     | ( <sup>2</sup> ) | ( <sup>2</sup> ) | ( <sup>2</sup> ) | ( <sup>2</sup> )       | ( <sup>2</sup> )       | ( <sup>2</sup> )       | ( <sup>2</sup> )       | 860                    | 789                    | 612                    | 744                    |
| Oregon.....           | <sup>3</sup> 351     | 320              | 265              | 242              | <sup>3</sup> 249       | 238                    | 187                    | 189                    | 129                    | 200                    | 183                    | 198                    |
| Pennsylvania.....     | 353                  | 293              | 238              | 224              | 189                    | 160                    | 130                    | 124                    | 666                    | 608                    | 545                    | 611                    |
| Tennessee.....        | 75                   | 95               | ( <sup>1</sup> ) | ( <sup>2</sup> ) | 53                     | 68                     | ( <sup>1</sup> )       | ( <sup>2</sup> )       | 97                     | 95                     | 82                     | 87                     |
| Vermont.....          | 24                   | 25               | ( <sup>2</sup> ) | 16               | 25                     | 26                     | ( <sup>2</sup> )       | 18                     | 69                     | 66                     | 60                     | 68                     |
| Virginia.....         | 378                  | 368              | 338              | 338              | 216                    | 223                    | 208                    | 242                    | 262                    | 275                    | 253                    | 311                    |
| Washington.....       | 1,000                | 1,026            | 988              | 1,095            | 566                    | 580                    | 421                    | 584                    | 395                    | 375                    | 343                    | 382                    |
| West Virginia.....    | ( <sup>2</sup> )     | ( <sup>2</sup> ) | ( <sup>2</sup> ) | ( <sup>2</sup> ) | ( <sup>2</sup> )       | ( <sup>2</sup> )       | ( <sup>2</sup> )       | ( <sup>2</sup> )       | 35                     | 44                     | 37                     | 46                     |
| Wisconsin.....        | 1,169                | 957              | 797              | 865              | 701                    | 586                    | 476                    | 532                    | 835                    | 727                    | 638                    | 718                    |
| All other States..... | 661                  | 580              | 1,024            | 1,027            | 344                    | 499                    | 629                    | 649                    | 2,016                  | 1,920                  | 1,658                  | 2,024                  |
| Total.....            | 7,196                | 6,723            | 5,633            | 6,562            | 4,630                  | 4,409                  | 3,760                  | 4,293                  | 10,169                 | 9,382                  | 7,998                  | 9,190                  |

<sup>1</sup> Included with Oregon.<sup>2</sup> Included in "All other States."<sup>3</sup> Includes California.

Forest Service, in cooperation with the Bureau of the Census.

TABLE 506.—*Pulpwood consumption, wood pulp and paper production of the United States, 1899, 1904-11, 1914, and 1916-33*

| Year      | Pulpwood<br>consump-<br>tion | Wood-pulp<br>production | Paper<br>production | Year      | Pulpwood<br>consump-<br>tion | Wood-pulp<br>production | Paper<br>production |
|-----------|------------------------------|-------------------------|---------------------|-----------|------------------------------|-------------------------|---------------------|
|           | Cords                        | Short tons              | Short tons          |           | Cords                        | Short tons              | Short tons          |
| 1899..... | 1,986,310                    | 1,179,525               | 2,167,593           | 1920..... | 6,114,072                    | 3,821,704               | 7,334,614           |
| 1904..... | 3,050,717                    | 1,921,768               | 3,106,696           | 1921..... | 4,557,179                    | 2,875,601               | 5,356,317           |
| 1905..... | 3,192,123                    |                         |                     | 1922..... | 5,548,842                    | 3,521,644               | 7,017,800           |
| 1906..... | 3,661,176                    |                         |                     | 1923..... | 5,872,870                    | 3,788,672               | 8,029,482           |
| 1907..... | 3,962,660                    | 2,547,879               |                     | 1924..... | 5,768,082                    | 3,723,266               |                     |
| 1908..... | 3,346,953                    | 2,118,947               |                     | 1925..... | 6,093,821                    | 3,962,217               | 9,182,204           |
| 1909..... | 4,001,607                    | 2,495,523               | 4,216,708           | 1926..... | 6,766,007                    | 4,394,766               | 19,794,086          |
| 1910..... | 4,094,306                    | 2,533,976               |                     | 1927..... | 6,750,935                    | 4,313,403               | 10,002,070          |
| 1911..... | 4,328,052                    | 2,686,134               |                     | 1928..... | 7,160,100                    | 4,510,800               | 10,403,338          |
| 1914..... | 4,470,763                    | 2,893,150               | 5,270,047           | 1929..... | 7,645,011                    | 4,862,885               | 11,140,235          |
| 1916..... | 5,223,558                    | 3,435,001               |                     | 1930..... | 7,195,524                    | 4,630,308               | 10,169,140          |
| 1917..... | 5,480,075                    | 3,509,939               | 5,919,647           | 1931..... | 6,722,766                    | 4,409,344               | 9,381,850           |
| 1918..... | 5,250,794                    | 3,313,861               | 6,051,523           | 1932..... | 5,633,123                    | 3,760,267               | 7,997,872           |
| 1919..... | 5,477,832                    | 3,517,952               | 6,190,861           | 1933..... | 6,561,674                    | 4,293,344               | 9,190,017           |

<sup>1</sup> Estimated by the American Paper and Pulp Association.

Forest Service; compiled from bulletins of the Census Bureau, the Forest Service, and the Federal Trade Commission.

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TABLE 507.—*Pulpwood consumption, by kinds, 1909, 1919, and 1929-33*

| Kinds of wood                | 1909             | 1919                  | 1929                  | 1930                   | 1931                   | 1932                  | 1933 <sup>1</sup>     |
|------------------------------|------------------|-----------------------|-----------------------|------------------------|------------------------|-----------------------|-----------------------|
| Spruce:                      | <i>Cords</i>     | <i>Cords</i>          | <i>Cords</i>          | <i>Cords</i>           | <i>Cords</i>           | <i>Cords</i>          | <i>Cords</i>          |
| Domestic.....                | 1, 653, 249      | 2, 313, 419           | 2, 074, 267           | 1, 844, 937            | 1, 651, 051            | 1, 423, 836           | 1, 495, 061           |
| Imported.....                | 768, 332         | 873, 795              | 1, 029, 913           | 888, 255               | 676, 339               | 608, 171              | 576, 000              |
| Hemlock:                     |                  |                       |                       |                        |                        |                       |                       |
| Domestic.....                | 559, 657         | 795, 154              | 1, 309, 170           | <sup>21</sup> 222, 961 | <sup>21</sup> 191, 048 | <sup>2</sup> 806, 230 | 1, 101, 642           |
| Imported.....                |                  |                       | 15, 379               |                        |                        |                       | 10, 914               |
| Pine:                        |                  |                       |                       |                        |                        |                       |                       |
| Southern yellow.....         | ( <sup>3</sup> ) | 234, 463              | 1, 036, 272           | 1, 030, 278            | 1, 294, 503            | 1, 279, 832           | 1, 560, 414           |
| Jack.....                    | ( <sup>3</sup> ) | 51, 581               | <sup>2</sup> 205, 760 | 200, 970               | <sup>2</sup> 159, 273  | <sup>2</sup> 154, 214 | 178, 974              |
| Miscellaneous.....           | 90, 885          | 7, 566                |                       |                        |                        |                       |                       |
| Poplar:                      |                  |                       |                       |                        |                        |                       |                       |
| Domestic.....                | 302, 876         | 180, 160              | 329, 466              | 291, 897               | 266, 603               | 192, 461              | <sup>2</sup> 333, 438 |
| Imported.....                | 25, 622          | 158, 220              | 157, 829              | 159, 092               | 94, 238                | 85, 693               |                       |
| Balsam fir:                  |                  |                       |                       |                        |                        |                       |                       |
| Domestic.....                | 95, 866          | 181, 840              | 317, 552              | 330, 548               | 338, 790               | 243, 224              | 261, 466              |
| Imported.....                |                  | 106, 974              | 45, 412               | 43, 935                | 55, 601                | 47, 535               | 41, 465               |
| Yellow poplar.....           |                  | 72, 605               | 129, 697              | 107, 795               | 73, 504                | 74, 151               | ( <sup>3</sup> )      |
| White fir.....               | 37, 176          | 31, 128               | 111, 054              | 90, 652                | 109, 277               | 70, 968               | 154, 847              |
| Beech, birch, and maple..... | 31, 890          | <sup>4</sup> 183, 426 | 76, 950               | 68, 848                | 69, 681                | 65, 955               | 93, 032               |
| Gum.....                     |                  | 30, 555               | 39, 685               | 41, 825                | 22, 440                | 17, 553               | ( <sup>3</sup> )      |
| Tamarack (larch).....        |                  | 44, 042               | 51, 855               | 40, 054                | 35, 433                | 15, 652               | 21, 844               |
| Other woods.....             | 188, 077         | 38, 013               | 153, 485              | 232, 980               | 126, 942               | <sup>2</sup> 105, 868 | 252, 436              |
| Slabs and mill waste.....    | 248, 977         | 175, 081              | 561, 285              | 595, 502               | 558, 043               | 441, 447              | 480, 141              |
| Total.....                   | 4, 001, 607      | 5, 477, 832           | 7, 645, 011           | 7, 195, 524            | 6, 722, 766            | 5, 635, 133           | 6, 561, 674           |

<sup>1</sup> Preliminary.

<sup>2</sup> Includes imported wood.

<sup>3</sup> Included in "Miscellaneous pines."

<sup>4</sup> Includes chestnut.

<sup>5</sup> Included in "other woods."

Forest Service, in cooperation with the Bureau of the Census.

TABLE 508.—*Paper: Consumption by kinds, and apparent per capita consumption, specified years, beginning 1810 <sup>1</sup>*

| Year                    | News-print              | Book                    | Boards                  | Wrap-ping               | Fine                    | All other               | All kinds               | Apparent per capita |
|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|---------------------|
|                         | <i>1,000 short tons</i> | <i>1,000 short tons</i> | <i>1,000 short tons</i> | <i>1,000 short tons</i> | <i>1,000 short tons</i> | <i>1,000 short tons</i> | <i>1,000 short tons</i> | <i>Pounds</i>       |
| 1810.....               |                         |                         |                         |                         |                         |                         | <sup>2</sup> 3          | 1                   |
| 1819.....               |                         |                         |                         |                         |                         |                         | <sup>2</sup> 12         | 2                   |
| 1839.....               |                         |                         |                         |                         |                         |                         | <sup>2</sup> 38         | 4                   |
| 1849.....               |                         |                         |                         |                         |                         |                         | <sup>2</sup> 78         | 7                   |
| 1859.....               |                         |                         |                         |                         |                         |                         | <sup>2</sup> 127        | 8                   |
| 1869.....               |                         |                         |                         |                         |                         |                         | 391                     | 20                  |
| 1879.....               |                         |                         |                         |                         |                         |                         | 457                     | 18                  |
| 1889.....               |                         |                         |                         |                         |                         |                         | 1, 121                  | 36                  |
| 1899.....               | 569                     | 314                     | 394                     | 535                     | 113                     | 233                     | 2, 158                  | 57                  |
| 1904.....               | 883                     | 495                     | 521                     | 644                     | 142                     | 365                     | 3, 050                  | 74                  |
| 1909.....               | 1, 159                  | 689                     | 883                     | 763                     | 193                     | 537                     | 4, 224                  | 93                  |
| 1914.....               | 1, 576                  | 926                     | 1, 292                  | 892                     | 244                     | 566                     | 5, 496                  | 112                 |
| 1917.....               | 1, 824                  | 846                     | 1, 805                  | 814                     | 276                     | 691                     | 6, 256                  | 122                 |
| 1918.....               | 1, 760                  | 800                     | 1, 927                  | 859                     | 348                     | 693                     | 6, 387                  | 123                 |
| 1919.....               | 1, 892                  | 838                     | 1, 940                  | 825                     | 306                     | 692                     | 6, 493                  | 124                 |
| 1920.....               | 2, 196                  | 1, 060                  | 2, 301                  | 1, 003                  | 371                     | 930                     | 7, 861                  | 148                 |
| 1921.....               | 2, 002                  | 707                     | 1, 641                  | 770                     | 230                     | 704                     | 6, 054                  | 112                 |
| 1922.....               | 2, 451                  | 968                     | 2, 154                  | 1, 059                  | 356                     | 1, 015                  | 8, 003                  | 146                 |
| 1923.....               | 2, 814                  | 1, 235                  | 2, 802                  | 1, 177                  | 374                     | 938                     | 9, 340                  | 167                 |
| 1925 <sup>3</sup> ..... | 3, 073                  | 1, 365                  | 3, 260                  | 1, 287                  | 472                     | 1, 013                  | 10, 590                 | 184                 |
| 1926.....               | 3, 517                  | 1, 408                  | 3, 637                  | 1, 435                  | 495                     | 1, 315                  | 11, 807                 | 203                 |
| 1927.....               | 3, 492                  | 1, 265                  | 3, 737                  | 1, 515                  | 502                     | 1, 404                  | 11, 915                 | 202                 |
| 1928.....               | 3, 561                  | 1, 321                  | 4, 009                  | 1, 457                  | 538                     | 1, 562                  | 12, 448                 | 208                 |
| 1929.....               | 3, 813                  | 1, 471                  | 4, 398                  | 1, 586                  | 593                     | 1, 490                  | 13, 351                 | 220                 |
| 1930.....               | 3, 496                  | 1, 370                  | 4, 014                  | 1, 556                  | 584                     | 1, 251                  | 12, 251                 | 199                 |
| 1931.....               | 3, 261                  | 1, 195                  | 3, 795                  | 1, 383                  | 430                     | 1, 116                  | 11, 230                 | 181                 |
| 1932.....               | 2, 831                  | 935                     | 3, 297                  | 1, 233                  | 418                     | 885                     | 9, 599                  | 154                 |
| 1933.....               | 2, 711                  | 1, 069                  | 4, 055                  | 1, 425                  | 472                     | 1, 130                  | 10, 862                 | 173                 |

<sup>1</sup> Imports added to United States production and domestic exports deducted.

<sup>2</sup> Domestic production only, value of exports and imports being approximately equal.

<sup>3</sup> Data for 1924 not available.

Forest Service; a computed table based on Bureau of the Census and Forest Service bulletins.

TABLE 509.—*Stock grazed on the national forests, and receipts, 1905-34*

| Fiscal year       | Cattle    | Horses           | Hogs   | Sheep     | Goats            | Receipts for grazing by fiscal years |
|-------------------|-----------|------------------|--------|-----------|------------------|--------------------------------------|
|                   | Number    | Number           | Number | Number    | Number           | Dollars                              |
| 1905              | 632,793   | 59,331           |        | 1,709,987 |                  | ( <sup>1</sup> )                     |
| 1906              | 1,015,148 | ( <sup>2</sup> ) |        | 5,762,200 | ( <sup>2</sup> ) | 513,000                              |
| 1907              | 1,200,153 | ( <sup>2</sup> ) |        | 6,657,083 | ( <sup>2</sup> ) | 857,005                              |
| 1908              | 1,304,142 | 76,003           | 2,076  | 6,960,919 | 126,192          | 947,365                              |
| 1909              | 1,491,385 | 90,019           | 4,501  | 7,679,698 | 139,896          | <sup>4</sup> 1,022,516               |
| 1910              | 1,409,873 | 84,552           | 3,145  | 7,558,650 | 90,300           | 969,971                              |
| 1911              | 1,351,922 | 91,516           | 4,500  | 7,371,747 | 77,668           | 927,967                              |
| 1912              | 1,403,025 | 95,243           | 4,330  | 7,467,890 | 83,849           | <sup>4</sup> 961,489                 |
| 1913              | 1,455,922 | 97,919           | 3,277  | 7,790,953 | 76,898           | 998,369                              |
| 1914              | 1,517,045 | 99,835           | 3,381  | 7,560,186 | 58,616           | 1,002,348                            |
| 1915              | 1,627,321 | 96,933           | 2,792  | 7,232,276 | 51,409           | 1,130,495                            |
| 1916              | 1,758,764 | 98,903           | 2,968  | 7,843,205 | 43,268           | 1,210,215                            |
| 1917              | 1,953,198 | 98,880           | 2,306  | 7,586,034 | 49,939           | 1,549,795                            |
| 1918              | 2,137,854 | 102,156          | 3,371  | 8,454,240 | 57,968           | 1,725,822                            |
| 1919              | 2,135,527 | 93,251           | 5,154  | 7,935,174 | 60,789           | 2,609,170                            |
| 1920              | 2,033,800 | 83,015           | 4,066  | 7,271,136 | 53,685           | 2,486,040                            |
| 1921              | 88,599    | 6,444            | 1,010  | 553,263   | 3,346            |                                      |
| 1921 <sup>5</sup> | 1,999,680 | 78,115           | 2,453  | 6,936,377 | 43,574           | 2,132,075                            |
| 1922 <sup>5</sup> | 1,832,491 | 67,856           | 2,149  | 6,497,912 | 36,153           | 1,815,975                            |
| 1923 <sup>5</sup> | 1,804,274 | 64,104           | 1,347  | 6,377,759 | 31,379           | 2,341,486                            |
| 1924 <sup>5</sup> | 1,664,087 | 58,184           | 1,660  | 3,301,308 | 29,068           | 1,915,551                            |
| 1925 <sup>5</sup> | 1,538,942 | 57,904           | 846    | 6,162,263 | 19,795           | 1,725,377                            |
| 1926 <sup>5</sup> | 1,456,858 | 57,896           | 1,085  | 6,212,657 | 15,660           | 1,421,589                            |
| 1927 <sup>5</sup> | 1,403,192 | 55,629           | 997    | 6,376,838 | 18,046           | 1,530,952                            |
| 1928 <sup>5</sup> | 1,335,903 | 51,956           | 1,206  | 6,497,081 | 17,070           | 1,713,730                            |
| 1929 <sup>5</sup> | 1,322,465 | 48,171           | 853    | 6,650,719 | 15,487           | 1,740,290                            |
| 1930 <sup>5</sup> | 1,321,431 | 42,357           | 540    | 6,799,236 | 13,496           | 1,942,914                            |
| 1931 <sup>5</sup> | 1,338,373 | 37,335           | 431    | 6,593,583 | 14,645           | 1,960,642                            |
| 1932 <sup>5</sup> | 1,361,160 | 35,105           | 528    | 6,308,500 | 12,438           | 829,060                              |
| 1933 <sup>5</sup> | 1,366,538 | 31,797           | 533    | 6,150,921 | 11,045           | 1,498,209                            |
| 1934 <sup>5</sup> |           |                  |        |           |                  | 1,358,688                            |

<sup>1</sup> No data available.<sup>2</sup> Included with cattle.<sup>3</sup> Included with sheep.<sup>4</sup> Subject to revision.<sup>5</sup> Last 6 months only.<sup>6</sup> Calendar year.

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TABLE 510.—*Number of stock grazed in national forests, by States, calendar year 1933, and total grazing receipts, fiscal year 1934*

| State          | Cattle    | Horses | Hogs   | Sheep     | Goats  | Receipts from grazing <sup>1</sup> |
|----------------|-----------|--------|--------|-----------|--------|------------------------------------|
|                | Number    | Number | Number | Number    | Number | Dollars                            |
| Arizona        | 191,089   | 1,339  | 115    | 291,072   |        | 101,067                            |
| Arkansas       | 865       |        | 51     | 5         |        | 167                                |
| California     | 138,717   | 3,883  | 125    | 367,723   | 662    | 106,906                            |
| Colorado       | 280,096   | 2,160  |        | 945,954   | 50     | 300,755                            |
| Florida        | 764       |        | 31     |           |        | 746                                |
| Idaho          | 125,423   | 4,569  |        | 1,313,633 |        | 178,143                            |
| Montana        | 126,140   | 6,151  |        | 585,598   | 100    | 109,880                            |
| Nebraska       | 11,667    | 407    |        |           |        | 4,768                              |
| Nevada         | 51,878    | 1,823  |        | 307,820   |        | 67,600                             |
| New Hampshire  | 58        | 2      |        |           |        | 42                                 |
| New Mexico     | 91,747    | 1,704  | 60     | 191,617   | 10,225 | 70,604                             |
| North Carolina | 717       | 8      | 129    | 70        | 8      | 339                                |
| Oklahoma       | 2,143     |        |        |           |        | 2,093                              |
| Oregon         | 83,159    | 1,340  |        | 612,336   |        | 100,349                            |
| Pennsylvania   | 53        |        |        |           |        | 2                                  |
| South Dakota   | 29,704    | 1,067  |        | 30,661    |        | 15,473                             |
| Tennessee      | 515       | 12     |        | 15        |        | 99                                 |
| Utah           | 108,831   | 3,251  | 22     | 738,776   |        | 165,745                            |
| Virginia       | 958       | 3      |        | 286       |        | 302                                |
| Washington     | 13,972    | 309    |        | 144,974   |        | 26,317                             |
| West Virginia  | 455       | 11     |        | 1,425     |        | 521                                |
| Wyoming        | 107,587   | 3,758  |        | 618,956   |        | 106,280                            |
| Total          | 1,366,538 | 31,797 | 533    | 6,150,921 | 11,045 | <sup>2</sup> 1,358,688             |

<sup>1</sup> Includes grazing trespass.<sup>2</sup> Includes Georgia \$319, Maine \$3, South Carolina \$87, and Wisconsin \$

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TABLE 511.—Free-use timber, cut from national forests, by States, 1931-34

| State               | 1931 <sup>1</sup>      |                         | 1932 <sup>1</sup>      |                         | 1933 <sup>1</sup>      |                         | 1934 <sup>1</sup>      |                         |
|---------------------|------------------------|-------------------------|------------------------|-------------------------|------------------------|-------------------------|------------------------|-------------------------|
|                     | Quan-<br>tity          | Esti-<br>mated<br>users | Quan-<br>tity          | Esti-<br>mated<br>users | Quan-<br>tity          | Esti-<br>mated<br>users | Quan-<br>tity          | Esti-<br>mated<br>users |
|                     | <i>M ft. b.<br/>m.</i> | <i>Number</i>           | <i>M ft. b.<br/>m.</i> | <i>Number</i>           | <i>M ft. b.<br/>m.</i> | <i>Number</i>           | <i>M ft. b.<br/>m.</i> | <i>Number</i>           |
| Alaska.....         | 74                     | 7                       | 58                     | 4                       | 1,081                  | 304                     | 2,945                  | 675                     |
| Alabama.....        |                        |                         |                        |                         | 5                      | 7                       | 180                    | 120                     |
| Arizona.....        | 10,879                 | 7,495                   | 13,021                 | 9,165                   | 14,623                 | 6,882                   | 14,563                 | 8,667                   |
| Arkansas.....       | 331                    | 95                      | 349                    | 143                     | 337                    | 118                     | 1,227                  | 486                     |
| California.....     | 5,674                  | 8,548                   | 9,809                  | 17,616                  | 11,760                 | 21,618                  | 15,096                 | 14,601                  |
| Colorado.....       | 10,894                 | 4,133                   | 15,428                 | 4,879                   | 14,083                 | 5,428                   | 14,166                 | 5,795                   |
| Florida.....        | 45                     | 55                      | 204                    | 93                      | 129                    | 87                      | 121                    | 124                     |
| Idaho.....          | 30,975                 | 14,743                  | 59,572                 | 21,356                  | 54,180                 | 19,831                  | 51,300                 | 16,654                  |
| Louisiana.....      |                        |                         |                        |                         |                        |                         | 500                    | 500                     |
| Michigan.....       | 981                    | 254                     | 3,173                  | 533                     | 3,078                  | 552                     | 2,750                  | 1,522                   |
| Minnesota.....      | 219                    | 110                     | 704                    | 230                     | 1,290                  | 307                     | 3,264                  | 295                     |
| Montana.....        | 17,375                 | 9,281                   | 28,696                 | 17,224                  | 31,372                 | 17,820                  | 31,109                 | 15,275                  |
| Nebraska.....       | 53                     | 32                      | 42                     | 24                      | 130                    | 45                      | 86                     | 13                      |
| Nevada.....         | 1,757                  | 470                     | 1,801                  | 577                     | 1,923                  | 613                     | 1,848                  | 799                     |
| New Mexico.....     | 22,503                 | 14,473                  | 27,962                 | 16,565                  | 20,255                 | 20,806                  | 23,485                 | 17,802                  |
| North Carolina..... | 1,554                  | 675                     | 2,123                  | 820                     | 2,072                  | 657                     | 3,114                  | 1,395                   |
| Oklahoma.....       | 118                    | 114                     | 128                    | 173                     | 98                     | 116                     |                        |                         |
| Oregon.....         | 22,677                 | 2,049                   | 34,930                 | 4,735                   | 33,431                 | 4,331                   | 24,284                 | 3,268                   |
| Pennsylvania.....   | 2,000                  | 500                     | 1,337                  | 1,938                   | 1,947                  | 1,025                   | 2,780                  | 1,532                   |
| South Dakota.....   | 3,585                  | 1,352                   | 5,200                  | 1,709                   | 3,882                  | 1,338                   | 8,191                  | 3,453                   |
| Tennessee.....      | 1,706                  | 895                     | 2,907                  | 1,509                   | 3,589                  | 3,694                   | 3,533                  | 1,369                   |
| Utah.....           | 22,620                 | 12,560                  | 35,332                 | 20,090                  | 39,346                 | 22,681                  | 23,075                 | 13,512                  |
| Virginia.....       | 436                    | 306                     | 872                    | 1,155                   | 1,189                  | 399                     | 221                    | 133                     |
| Washington.....     | 2,741                  | 721                     | 15,366                 | 2,623                   | 3,389                  | 1,002                   | 7,121                  | 1,495                   |
| West Virginia.....  | 61                     | 33                      | 347                    | 80                      | 229                    | 66                      | 20                     | 60                      |
| Wisconsin.....      | 81                     | 12                      | 313                    | 46                      | 459                    | 71                      | 95                     | 31                      |
| Wyoming.....        | 8,361                  | 1,800                   | 10,570                 | 2,175                   | 12,935                 | 3,933                   | 12,566                 | 3,945                   |
| Total.....          | 167,680                | 81,618                  | 270,244                | 125,472                 | 265,812                | 133,631                 | 243,243                | 113,821                 |

<sup>1</sup> Calendar year.

<sup>1</sup> Fiscal year.

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TABLE 512.—Fires on national forests, 1924-33

| Year      | Fires         | Area<br>burned <sup>1</sup> | Damage              |                                  | Cost of<br>fighting<br>fire <sup>3</sup> |
|-----------|---------------|-----------------------------|---------------------|----------------------------------|--|
|           |               |                             | Timber<br>destroyed | Value, all<br>items <sup>2</sup> |  |
|           | <i>Number</i> | <i>Thousand<br/>acres</i>   | <i>M ft. b. m.</i>  | <i>Dollars</i>                   | <i>Dollars</i>                           |
| 1924----- | 8,247         | 826                         | 677,925             | 1,892,605                        | 1,715,706                                |
| 1925----- | 8,263         | 349                         | 342,554             | 968,892                          | 947,773                                  |
| 1926----- | 7,095         | 956                         | 1,329,573           | 5,716,660                        | 2,298,358                                |
| 1927----- | 5,693         | 224                         | 84,396              | 375,338                          | 710,212                                  |
| 1928----- | 6,921         | 499                         | 234,460             | 1,395,018                        | 1,309,875                                |
| 1929----- | 7,449         | 978                         | 1,427,551           | 5,831,858                        | 3,400,403                                |
| 1930----- | 8,338         | 206                         | 65,951              | 493,229                          | 1,303,099                                |
| 1931----- | 8,466         | 640                         | 989,631             | 4,409,309                        | 4,271,294                                |
| 1932----- | 7,037         | 422                         | 57,805              | 685,943                          | 1,107,931                                |
| 1933----- | 6,315         | 160                         | 46,397              | 387,081                          | 1,099,611                                |

<sup>1</sup> Government and private land inside national-forest boundaries.

<sup>2</sup> Includes the reported value of timber destroyed, forage, and buildings.

<sup>3</sup> Includes the cost of emergency patrol, tools, and supplies.

<sup>4</sup> Includes \$593,946 from E. C. W. funds.

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TABLE 513.—*Emergency Conservation Work: Forest-fire prevention work completed Apr. 5, 1933–Mar. 31, 1934*

| State               | Camps               | Fire breaks | Reduction of fire hazards | Road and trail-side clearing | Look-out towers | Fighting forest fires | Fire suppression | Fire prevention |
|---------------------|---------------------|-------------|---------------------------|------------------------------|-----------------|-----------------------|------------------|-----------------|
|                     | Number <sup>1</sup> | Miles       | Acres                     | Miles                        | Number          | Man-days              | Man-days         | Man-days        |
| Alabama.....        | 14                  | 3,113       | 7,473                     | 28                           | 5               | 21,578                | 3,860            | 549             |
| Arizona.....        | 18                  | 2           | 13,253                    | 156                          | 6               | 1,131                 | 400              | -----           |
| Arkansas.....       | 30                  | 1           | 5,720                     | 567                          | 13              | 20,006                | 21,533           | 787             |
| California.....     | 111                 | 941         | 35,903                    | 2,276                        | 12              | 114,895               | 76,737           | 9,383           |
| Colorado.....       | 11                  | 4           | 698                       | 252                          | -----           | 1,319                 | 837              | 67              |
| Connecticut.....    | 16                  | 37          | 178                       | 106                          | 4               | 495                   | -----            | 875             |
| Florida.....        | 22                  | 3,188       | 519                       | 148                          | 18              | 16,839                | 14,555           | 1,818           |
| Georgia.....        | 30                  | 2,409       | 34,693                    | 438                          | 28              | 21,647                | 9,613            | 324             |
| Idaho.....          | 51                  | 43          | 2,683                     | 42                           | 15              | 28,750                | 1,166            | -----           |
| Illinois.....       | 16                  | 1           | 33                        | 11                           | -----           | 1,583                 | -----            | -----           |
| Indiana.....        | 19                  | 23          | 2,506                     | 154                          | 7               | 3,770                 | 108              | 8               |
| Iowa.....           | 11                  | 11          | 523                       | 9                            | -----           | -----                 | -----            | -----           |
| Kansas.....         | 9                   | -----       | -----                     | 3                            | -----           | -----                 | -----            | -----           |
| Kentucky.....       | 19                  | 62          | 22                        | 46                           | 1               | 3,438                 | 286              | 15              |
| Louisiana.....      | 24                  | 1,276       | 29,515                    | 334                          | 8               | 15,042                | 13,227           | 42              |
| Maine.....          | 12                  | 12          | 313                       | 144                          | -----           | 739                   | 1,086            | 20              |
| Maryland.....       | 10                  | 217         | 640                       | 164                          | 3               | 379                   | 5,661            | 56              |
| Massachusetts.....  | 23                  | 78          | 2,542                     | 190                          | 1               | 170                   | 628              | 2,017           |
| Michigan.....       | 52                  | 262         | 35,367                    | 1,044                        | 8               | 54,044                | 3,114            | 452             |
| Minnesota.....      | 48                  | 175         | 23,037                    | 779                          | 11              | 55,253                | 1,458            | 6,687           |
| Mississippi.....    | 20                  | 422         | 97                        | 5                            | 5               | 11,131                | 635              | 83              |
| Missouri.....       | 12                  | 40          | 1,600                     | 179                          | 3               | 1,011                 | 293              | -----           |
| Montana.....        | 10                  | -----       | 238                       | 30                           | 1               | 6,706                 | 1,278            | 350             |
| Nebraska.....       | 5                   | 9           | 1,834                     | 16                           | -----           | 28                    | 350              | 1,502           |
| Nevada.....         | 3                   | 1           | 3                         | 35                           | -----           | 236                   | -----            | -----           |
| New Hampshire.....  | 12                  | 28          | 3,937                     | 53                           | 1               | 1,032                 | 19               | 19              |
| New Jersey.....     | 11                  | 134         | 1,853                     | 22                           | 1               | 126                   | -----            | -----           |
| New Mexico.....     | 12                  | -----       | -----                     | 120                          | 2               | 656                   | 151              | 34              |
| New York.....       | 28                  | 76          | 397                       | 109                          | 2               | 2,592                 | -----            | -----           |
| North Carolina..... | 24                  | 177         | 3,126                     | 76                           | 6               | 10,379                | 2,512            | 347             |
| Ohio.....           | 24                  | 15          | 6                         | 33                           | 5               | 700                   | -----            | -----           |
| Oklahoma.....       | 14                  | 2           | 4,605                     | 128                          | 4               | 7,578                 | 3,867            | 194             |
| Oregon.....         | 36                  | 113         | 10,032                    | 502                          | 39              | 51,249                | 6,194            | 671             |
| Pennsylvania.....   | 93                  | 336         | 4,816                     | 1,053                        | 6               | 3,189                 | 115              | 200             |
| Rhode Island.....   | 3                   | 44          | -----                     | -----                        | -----           | 5                     | -----            | -----           |
| South Carolina..... | 17                  | 2,259       | 563                       | 157                          | 22              | 35,257                | 18,261           | 1,670           |
| South Dakota.....   | 15                  | 20          | 3,031                     | 551                          | -----           | 3,752                 | 2,326            | 112             |
| Tennessee.....      | 25                  | 27          | 529                       | 23                           | 14              | 13,471                | 595              | 113             |
| Texas.....          | 27                  | 62          | -----                     | 47                           | 7               | 11,247                | 16,592           | -----           |
| Utah.....           | 14                  | 9           | 307                       | 100                          | -----           | 1,531                 | 121              | -----           |
| Vermont.....        | 12                  | 13          | 234                       | 72                           | 1               | 264                   | -----            | 605             |
| Virginia.....       | 31                  | 758         | 57,851                    | 131                          | 32              | 7,133                 | 450              | 910             |
| Washington.....     | 34                  | 213         | 15,420                    | 685                          | 14              | 20,058                | 6,488            | 1,233           |
| West Virginia.....  | 15                  | 566         | 128                       | 115                          | 5               | 4,671                 | 201              | 428             |
| Wisconsin.....      | 41                  | 125         | 180,232                   | 1,223                        | 24              | 79,235                | 6,772            | 229             |
| Wyoming.....        | 72                  | 2           | 80                        | 214                          | -----           | 1,979                 | -----            | 100             |
| United States.....  | 1,156               | 17,317      | 486,587                   | 13,005                       | 334             | 636,954               | 221,519          | 31,490          |

<sup>1</sup> Average number of camps.

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This table reports only the forest-fire prevention and suppression work of the C. C. O. camps under the supervision of the Forest Service of the Department of Agriculture. For a similar report of the entire number of camps, see the second report of the Director of Emergency Conservation Work, 1934.

TABLE 514.—Emergency Conservation Work: Flood-control work completed Apr. 5, 1933–Mar. 31, 1934

| State               | Surveys          |             |             | Clearing   |           |            | Dams            |            |         |         |           |           | Channel enlargement excavation |            |         |                    | Reconstruction of existing dams |         |         |           |         |         |
|---------------------|------------------|-------------|-------------|------------|-----------|------------|-----------------|------------|---------|---------|-----------|-----------|--------------------------------|------------|---------|--------------------|---------------------------------|---------|---------|-----------|---------|---------|
|                     | Lines and grades | Topographic | Dam site    | River bank | Channel   | Earth fill | Site strip-ping | Excavation |         | Rock    | Con-crete | Rock fill | Steel                          | Excavation |         | Con-crete re-moval | New con-crete                   | Steel   | Leaves  | Crib-bing |         |         |
|                     |                  |             |             |            |           |            |                 | Sq. yd.    | Sq. yd. |         |           |           |                                | Sq. yd.    | Sq. yd. |                    |                                 |         |         |           | Cu. yd. | Cu. yd. |
| Alabama.....        | Lin. ft.         | Sq. yd.     | Sq. yd.     | Sq. yd.    | Lin. yd.  | Cu. yd.    | Cu. yd.         | Cu. yd.    | Cu. yd. | Cu. yd. | Cu. yd.   | Cu. yd.   | Cu. yd.                        | Cu. yd.    | Cu. yd. | Cu. yd.            | Cu. yd.                         | Cu. yd. | Cu. yd. | Lin. ft.  |         |         |
| Arizona.....        | 227,525          | 2,445,067   | 70,900      | 134,560    | 287       | 1,085      | 6,530           | 2,400      | 938     | 28,677  | 2,347     | 3,426     | 24,347                         | 28,677     | 59,060  | 30,012             |                                 |         |         | 6,213     |         |         |
| California.....     | 23,700           |             | 4,937       |            | 35,395    | 1,085      | 6,530           | 2,400      | 938     | 28,677  | 2,347     | 3,426     | 24,347                         | 28,677     | 59,060  | 30,012             |                                 |         |         | 169,837   |         |         |
| Colorado.....       | 1,800            |             |             |            | 720       | 65         | 280             | 3,113      | 573     | 236     | 236       | 236       | 4,531                          | 1,439      | 40      |                    |                                 |         |         | 2,982     |         |         |
| Florida.....        | 156,040          |             |             |            |           |            |                 |            |         |         |           |           |                                |            |         |                    |                                 |         |         | 220       |         |         |
| Idaho.....          |                  |             |             |            |           |            |                 |            |         |         |           |           |                                |            |         |                    |                                 |         |         |           |         |         |
| Indiana.....        | 38,607           |             |             |            | 340       | 35         |                 |            |         |         |           |           |                                |            |         |                    |                                 |         |         |           |         |         |
| Iowa.....           | 109,860          | 440,200     | 4,500       | 19,014     | 1,500     | 45,628     | 10,814          |            | 1,375   | 473     |           |           | 5,045                          | 34,871     | 497     |                    |                                 |         |         | 640       |         |         |
| Kansas.....         | 108,800          | 70,000      | 136,170     |            | 20,803    | 110,025    | 34,450          | 39,320     | 6,552   | 7,575   |           |           |                                |            |         |                    |                                 |         |         | 1,828     |         |         |
| Kentucky.....       | 30,000           |             |             |            |           |            |                 |            |         |         |           |           |                                |            |         |                    |                                 |         |         |           |         |         |
| Louisiana.....      | 266,600          |             | 1,853,844   |            |           |            | 1,061           |            |         |         |           |           |                                |            |         |                    |                                 |         |         |           |         |         |
| Maine.....          |                  |             |             |            |           |            |                 |            |         |         |           |           |                                |            |         |                    |                                 |         |         |           |         |         |
| Maryland.....       |                  |             |             |            |           |            |                 |            |         |         |           |           |                                |            |         |                    |                                 |         |         |           |         |         |
| Massachusetts.....  | 17,004           |             | 354,740     |            |           | 827        |                 | 1,000      |         | 556     | 65        |           |                                |            |         |                    |                                 |         |         | 30        |         |         |
| Michigan.....       |                  |             |             |            |           |            |                 |            |         |         |           |           |                                |            |         |                    |                                 |         |         |           |         |         |
| Minnesota.....      | 4,730,537        |             | 33,368      |            | 380       | 45,728     |                 | 13,982     |         | 826     | 17,687    | 8,400     |                                |            |         |                    |                                 |         |         | 145       |         |         |
| Missouri.....       | 40,940           |             |             |            |           | 3,863      |                 |            | 408     |         |           |           |                                |            |         |                    |                                 |         |         |           |         |         |
| Nebraska.....       | 443,768          | 752,212     | 27,115      | 4,174      | 6,065     | 91,420     | 43              | 25,594     | 148     | 561     | 349       | 11,368    | 7,526                          | 8          |         |                    |                                 |         |         | 2,505     |         |         |
| Nevada.....         | 274,688          | 30,887,200  | 92,384      |            | 12,099    | 86,703     | 1,000           | 1,000      |         | 1,930   |           | 300       | 22,009                         |            |         |                    |                                 |         |         | 50,000    |         |         |
| New Hampshire.....  |                  |             |             |            |           | 150        | 50              | 6,163      | 100     | 52      | 125       |           |                                |            |         |                    |                                 |         |         | 1,668     |         |         |
| New Jersey.....     | 150,000          | 10,000      |             |            |           |            |                 |            |         |         |           |           |                                |            |         |                    |                                 |         |         | 300       |         |         |
| New Mexico.....     |                  |             |             |            |           |            |                 |            |         |         |           |           |                                |            |         |                    |                                 |         |         | 255       |         |         |
| New York.....       | 9,670            | 4,000       | 1,530       |            | 600       | 14,825     | 5,417           | 8,420      | 1,304   | 408     | 29        |           | 1,460                          | 75         |         |                    |                                 |         |         | 531       |         |         |
| North Carolina..... | 1,000            |             |             |            | 250       |            |                 |            |         |         |           |           |                                |            |         |                    |                                 |         |         | 1,317     |         |         |
| North Dakota.....   |                  |             |             |            |           | 210,527    |                 |            |         |         |           |           |                                |            |         |                    |                                 |         |         |           |         |         |
| Oklahoma.....       | 167,920          |             | 681,000     |            | 60        | 11,987     | 220             | 6,745      | 3,663   | 3,342   | 7,358     | 15,084    |                                |            |         |                    |                                 |         |         | 18,217    |         |         |
| Oregon.....         |                  | 30,611      |             |            | 370       | 5,083      |                 | 1,892      |         | 1,025   |           |           |                                |            |         |                    |                                 |         |         |           |         |         |
| Pennsylvania.....   | 151,960          |             |             |            | 2,890     | 74,746     |                 |            |         | 117     | 3,819     | 3,000     | 17,670                         |            |         |                    |                                 |         |         | 2,800     |         |         |
| South Dakota.....   |                  |             |             |            |           |            |                 |            |         |         |           |           |                                |            |         |                    |                                 |         |         | 1,988     |         |         |
| Tennessee.....      |                  |             |             |            | 24,000    |            |                 |            |         |         |           |           |                                |            |         |                    |                                 |         |         | 560       |         |         |
| Texas.....          | 10,000           | 3,800,000   |             |            | 100       | 16,559     |                 | 335        | 4,686   | 695     | 1,880     |           |                                |            |         |                    |                                 |         |         |           |         |         |
| Utah.....           | 182,584          | 10,000,239  | 26,036      | 128,045    | 4,330     | 80,683     | 4,300           | 42,246     | 9,019   | 4,071   | 37,623    | 1,400     | 104,571                        | 10,700     | 5,500   |                    |                                 |         |         | 64,867    |         |         |
| Vermont.....        |                  |             |             |            | 60        |            |                 |            |         |         |           |           |                                |            |         |                    |                                 |         |         | 10,627    |         |         |
| Virginia.....       |                  |             |             |            |           |            |                 |            |         |         |           |           |                                |            |         |                    |                                 |         |         |           |         |         |
| Washington.....     | 105,970          |             |             |            |           |            |                 |            |         |         |           |           |                                |            |         |                    |                                 |         |         |           |         |         |
| West Virginia.....  |                  | 6,000       |             |            |           |            |                 |            |         |         |           |           |                                |            |         |                    |                                 |         |         |           |         |         |
| Wisconsin.....      | 3,551,185        | 58,000      |             |            |           |            |                 |            |         |         |           |           |                                |            |         |                    |                                 |         |         | 800       |         |         |
| Wyoming.....        |                  |             |             |            | 2,000     |            |                 | 2,500      | 2,500   | 8       | 356       |           | 1,000                          |            |         |                    |                                 |         |         | 2,400     |         |         |
| United States.....  | 10,940,651       | 48,612,660  | 323,649,388 | 88,840     | 1,038,928 | 63,641     | 160,711         | 128,437    | 22,769  | 88,766  | 101,273   | 3,783     | 71,414                         | 100        | 157     | 1,085              | 64,000                          | 208,655 |         |           |         |         |

Forest Service.

This table reports only the flood control work of the C. C. C. camps under the supervision of the Forest Service of the Department of Agriculture. For a similar report of the entire number of camps, see the second report of the Director of Emergency Conservation Work, 1934.

TABLE 515.—*Emergency Conservation Work: Erosion-control work completed Apr. 5, 1933–Mar. 31, 1934*

| State               | Erosion camps       | Dams    | Land benefited | Bank protection | Ditches    |
|---------------------|---------------------|---------|----------------|-----------------|------------|
|                     | Number <sup>1</sup> | Number  | Acres          | Sq. yd.         | Linear yd. |
| Alabama.....        | 2                   | 3,392   | 21,305         | 178,912         | .....      |
| Arizona.....        | .....               | 46,566  | 29,156         | 46,046          | .....      |
| California.....     | .....               | 405     | 6,940          | 404,364         | 7,190      |
| Colorado.....       | .....               | 40,980  | 27,764         | 27,410          | .....      |
| Georgia.....        | .....               | .....   | 120            | 500             | .....      |
| Idaho.....          | .....               | 2       | .....          | .....           | .....      |
| Illinois.....       | 9                   | 17,462  | 50,371         | 2,223,205       | 1,222      |
| Indiana.....        | 9                   | 43,462  | 24,245         | 98,008,434      | 11,284     |
| Iowa.....           | 11                  | 23,144  | 178,095        | 8,598           | .....      |
| Kansas.....         | 5                   | 589     | 979            | .....           | .....      |
| Kentucky.....       | 9                   | 5,613   | 7,896          | 1,083,587       | 13,575     |
| Louisiana.....      | 4                   | .....   | 5              | 2,000           | .....      |
| Maryland.....       | .....               | 8       | .....          | .....           | .....      |
| Michigan.....       | .....               | .....   | 93             | 20,752          | 1,432      |
| Minnesota.....      | 4                   | 1,954   | 36,956         | 7,869           | .....      |
| Mississippi.....    | 8                   | 105,497 | 45,881         | 4,950,412       | .....      |
| Missouri.....       | 4                   | 1,222   | 24,808         | 21,024          | .....      |
| Montana.....        | .....               | .....   | .....          | .....           | 6,266      |
| Nebraska.....       | 3                   | 660     | 16,514         | 13,235          | .....      |
| Nevada.....         | 2                   | .....   | 16             | .....           | .....      |
| New Hampshire.....  | .....               | .....   | 75             | .....           | .....      |
| New Mexico.....     | 1                   | 41,399  | 38,531         | 2,600           | .....      |
| New York.....       | .....               | .....   | .....          | 4,000           | .....      |
| North Carolina..... | .....               | 4,974   | 4,316          | 34,204          | .....      |
| Ohio.....           | 13                  | 10,281  | 12,611         | 886,901         | 6,559      |
| Oklahoma.....       | 5                   | 3,918   | 33,490         | 90,111          | .....      |
| Oregon.....         | .....               | 467     | 63             | .....           | .....      |
| Pennsylvania.....   | .....               | .....   | 13             | .....           | .....      |
| South Carolina..... | .....               | 1,651   | 360            | .....           | .....      |
| South Dakota.....   | 1                   | 201     | 57             | 500             | .....      |
| Tennessee.....      | 5                   | 49,227  | 39,526         | 563,003         | .....      |
| Texas.....          | 10                  | 3,435   | 28,810         | 1,303           | .....      |
| Utah.....           | 5                   | 205     | 5,041          | .....           | .....      |
| Washington.....     | .....               | .....   | 5              | .....           | .....      |
| Wisconsin.....      | 4                   | .....   | 5,729          | .....           | .....      |
| Wyoming.....        | .....               | 321     | 1,361          | .....           | .....      |
| United States.....  | 114                 | 407,065 | 640,132        | 109,298,970     | 47,528     |

<sup>1</sup> Average number of camps. Many other camps under Forest Service supervision did considerable erosion-control work.

#### Forest Service.

This table reports only the erosion-control work of the C. C. C. camps under the supervision of the Forest Service of the Department of Agriculture. For a similar report of the entire number of camps, see the second report of the Director of Emergency Conservation Work, 1934.

TABLE 516.—*Turpentine and rosin: Industrial consumption, United States, average 1927–31, annual 1932 and 1933*

| Industry   | Turpentine      |           |           | Rosin           |                 |                 |
|--|-----------------|-----------|-----------|-----------------|-----------------|-----------------|
|  | Average 1927–31 | 1932      | 1933      | Average 1927–31 | 1932            | 1933            |
|  | Gallons         | Gallons   | Gallons   | 500-lb. barrels | 500-lb. barrels | 500-lb. barrels |
| Automobiles and wagons.....                        | 133,953         | 33,245    | 42,628    | 1,831           | 773             | 1,505           |
| Chemicals and pharmaceuticals.....                 | 50,272          | 32,495    | 37,394    | 5,337           | 3,028           | 3,889           |
| Foundries and foundry supplies.....                | 16,054          | 5,750     | 10,284    | 17,881          | 3,663           | 1,670           |
| Linoleum.....                                      | 2,220           | 2,539     | 110       | 38,361          | 16,003          | 19,530          |
| Matches.....                                       | .....           | .....     | .....     | 2,922           | 2,749           | 3,160           |
| Miscellaneous.....                                 | 45,888          | 39,960    | 41,511    | 3,477           | 770             | 3,045           |
| Oils and greases.....                              | 52,151          | 29,324    | 10,067    | 47,808          | 21,899          | 30,634          |
| Paper and paper size.....                          | 3,632           | 1,666     | 1,446     | 332,188         | 261,000         | 320,940         |
| Paint and varnish.....                             | 4,234,556       | 2,280,214 | 2,568,241 | 221,249         | 121,240         | 168,640         |
| Printing ink.....                                  | 13,039          | 22,635    | 19,465    | 14,581          | 10,225          | 11,677          |
| Sealing wax, pitch, insulations, and plastics..... | 63,070          | 36,262    | 31,266    | 30,869          | 11,559          | 11,519          |
| Shipyards, car shops.....                          | 46,361          | 34,188    | 25,566    | 829             | 108             | 39              |
| Shoe polish.....                                   | 562,318         | 549,282   | 575,793   | 691             | 290             | 850             |
| Soap.....  | 4,726           | 8,733     | 5,694     | 214,085         | 261,350         | 264,173         |
| Total.....   | 5,230,740       | 3,076,293 | 3,369,405 | 932,099         | 714,657         | 841,271         |

TABLE 517.—*Turpentine and rosin: Stocks on hand and en route in the United States as of Mar. 31, average 1928-32, annual 1933 and 1934*

| Location   | Turpentine                  |                       |                             | Rosin                                   |                                   |   |
|--|-----------------------------|-----------------------|-----------------------------|---|-----------------------------------|---|
|  | Average<br>1928-32          | 1933                  | 1934                        | Average<br>1928-32                      | 1933                              | 1934                                    |
| Gum turpentine stills.....                           | <i>Gallons</i><br>1 548,781 | <i>Gallons</i><br>(?) | <i>Gallons</i><br>3 799,406 | <i>500-lb.<br/>barrels</i><br>1 105,920 | <i>500-lb.<br/>barrels</i><br>(?) | <i>500-lb.<br/>barrels</i><br>2 201,651 |
| Steam distillation plants 4.....                     | 475,827                     | 659,920               | 983,887                     | 106,945                                 | 101,811                           | 85,200                                  |
| Destructive distillation plants.....                 | 5 27,427                    | 30,166                | 62,743                      |   |                                   |   |
| Sulphate wood turpentine plants.....                 | 6 11,103                    | 40,302                | 76,907                      |   |                                   |   |
| Southern primary ports and concentration points..... | 2,902,494                   | 3,810,845             | 2,531,712                   | 252,500                                 | 272,830                           | 157,201                                 |
| Eastern distributing points.....                     | 359,060                     | 366,532               | 391,408                     | 8,935                                   | 15,275                            | 6,924                                   |
| Central distributing points.....                     | 754,962                     | 648,341               | 764,129                     | 12,990                                  | 12,348                            | 8,950                                   |
| Western distributing points.....                     | 110,980                     | 117,217               | 130,694                     | 2,508                                   | 1,260                             | 990                                     |
| Plants of industrial consumers.....                  | 1,175,686                   | 606,485               | 927,604                     | 243,420                                 | 303,866                           | 425,626                                 |
| Total.....   | 6,366,320                   | 7 6,279,808           | 6,668,485                   | 733,218                                 | 7 707,390                         | 889,542                                 |

1 For 1928, 1930, and 1932; data not available for other years.

2 Data not available.

3 Stocks as of Dec. 1, 1933; reported by Bureau of the Census.

4 Compiled from Hercules Powder Co. reports.

5 Data not available for 1928; average for 4-year period.

6 For 1931 and 1932 only; data not available for other years.

7 Exclusive of quantities at gum turpentine stills.

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TABLE 518.—*Turpentine and rosin: Exports and imports, United States, average 1927-28 to 1931-32, annual 1932-33 and 1933-34*

| Item         | Turpentine (years beginning April) |                              |                              | Rosin (years beginning April)           |   |   |
|--------------|------------------------------------|------------------------------|------------------------------|---|---|---|
|              | Average<br>1927-28 to<br>1931-32   | 1932-33                      | 1933-34                      | Average<br>1927-28 to<br>1931-32        | 1932-33                                 | 1933-34                                 |
| Exports..... | <i>Gallons</i><br>15,819,234       | <i>Gallons</i><br>11,252,781 | <i>Gallons</i><br>15,010,054 | <i>500-lb.<br/>barrels</i><br>1,288,426 | <i>500-lb.<br/>barrels</i><br>1,089,294 | <i>500-lb.<br/>barrels</i><br>1,298,725 |
| Imports..... | 343,509                            | 453,982                      | 500,159                      | 2,652                                   | 1                                       | 3,617                                   |

Bureau of Chemistry and Soils; compiled from Department of Commerce reports.



TABLE 519.—*Hunters' licenses issued by States, with money returns, for the seasons 1932 and 1933*<sup>1</sup>

| State                         | Licenses issued  |                  |                       |         |           |           | Money returns |              |
|-------------------------------|------------------|------------------|-----------------------|---------|-----------|-----------|---------------|--------------|
|                               | Resident         |                  | Nonresident and alien |         | Total     |           | 1932          | 1933         |
|                               | 1932             | 1933             | 1932                  | 1933    | 1932      | 1933      |               |              |
|                               | Number           | Number           | Number                | Number  | Number    | Number    | Dollars       | Dollars      |
| Alabama.....                  | 72,271           | 54,042           | 163                   | 127     | 72,424    | 54,159    | 95,353.25     | 68,738.65    |
| Alaska.....                   | ( <sup>2</sup> ) | ( <sup>2</sup> ) | 176                   | 89      | 176       | 89        | 10,620.00     | 5,130.00     |
| Arizona <sup>3</sup> .....    | 3 18,000         | 3 20,067         | 3 150                 | 4 258   | 18,150    | 20,325    | 48,750.00     | 55,612.00    |
| Arkansas.....                 | 51,939           | 41,512           | 2,156                 | 725     | 54,095    | 42,237    | 85,541.30     | 53,525.50    |
| California <sup>3</sup> ..... | 3 200,000        | 153,375          | 3 600                 | 656     | 200,600   | 154,031   | 400,000.00    | 453,159.15   |
| Colorado.....                 | 4 94,712         | 4 71,208         | 194                   | 170     | 94,906    | 74,378    | 215,133.00    | 173,692.00   |
| Connecticut.....              | 4 26,183         | 4 27,769         | 4 451                 | 4 447   | 26,634    | 28,216    | 96,740.00     | 100,718.00   |
| Delaware.....                 | 4 1,208          | 4 1,128          | 85                    | 71      | 1,293     | 1,199     | 2,494.72      | 2,433.00     |
| Florida.....                  | 43,745           | 38,400           | 352                   | 323     | 44,097    | 38,723    | 104,438.00    | 89,977.50    |
| Georgia.....                  | 30,418           | 39,227           | 218                   | ---     | 30,636    | 39,227    | 50,231.70     | 86,000.00    |
| Idaho.....                    | 4 65,368         | 4 63,938         | 313                   | 4 387   | 65,681    | 64,325    | 128,664.20    | 126,412.70   |
| Illinois.....                 | 302,458          | 280,525          | 843                   | 708     | 303,301   | 281,235   | 239,488.50    | 221,013.75   |
| Indiana.....                  | 4 281,621        | 4 340,338        | 258                   | 4 155   | 281,879   | 340,541   | 248,447.00    | 342,788.50   |
| Iowa.....                     | 4 242,901        | 4 225,027        | 196                   | 69      | 243,097   | 225,096   | 242,239.70    | 226,062.00   |
| Kansas.....                   | 107,330          | 4 78,089         | 903                   | 131     | 108,233   | 78,220    | 155,629.00    | 90,152.00    |
| Kentucky.....                 | 70,610           | 71,154           | 128                   | 95      | 70,738    | 71,249    | 61,298.50     | 61,330.90    |
| Louisiana.....                | 75,811           | 58,971           | 89                    | 396     | 75,900    | 59,367    | 78,061.00     | 61,861.00    |
| Maine.....                    | 4 108,205        | 4 99,519         | 4 049                 | 3 561   | 112,254   | 103,080   | 113,240.00    | 102,814.93   |
| Maryland.....                 | 61,155           | 62,078           | 947                   | 1,077   | 62,102    | 63,155    | 103,868.00    | 105,710.30   |
| Massachusetts.....            | 4 107,166        | 4 73,803         | 1,721                 | 424     | 108,887   | 74,227    | 269,868.55    | 159,798.40   |
| Michigan.....                 | 258,459          | 396,383          | 578                   | 2,707   | 259,097   | 399,090   | 555,170.00    | 484,163.76   |
| Minnesota.....                | 216,985          | 253,161          | 159                   | 136     | 217,144   | 253,297   | 238,249.40    | 264,710.30   |
| Mississippi.....              | ---              | 80,069           | ---                   | 236     | ---       | 80,305    | ---           | 110,445.00   |
| Missouri.....                 | 4 170,275        | 4 180,170        | 4 439                 | 4 459   | 170,714   | 180,629   | 244,892.00    | 196,550.17   |
| Montana.....                  | 4 86,937         | 4 82,763         | 129                   | 99      | 87,066    | 82,862    | 152,571.00    | 143,092.00   |
| Nebraska.....                 | 4 147,544        | 4 138,926        | 4 382                 | 4 453   | 147,926   | 139,379   | 151,364.00    | 143,456.00   |
| Nevada.....                   | 5,987            | 5,220            | 56                    | 60      | 6,043     | 5,280     | 15,527.50     | 13,665.00    |
| New Hampshire.....            | 4 51,387         | 4 48,395         | 4 1,830               | 4 4,737 | 53,217    | 53,132    | 122,537.30    | 120,036.08   |
| New Jersey.....               | 4 118,698        | 4 107,696        | 4 1,118               | 4 877   | 119,816   | 108,573   | 330,546.60    | 227,815.20   |
| New Mexico <sup>3</sup> ..... | 3 19,000         | 4 14,373         | 3 1,700               | 4 824   | 20,700    | 15,697    | 96,000.00     | 72,456.91    |
| New York.....                 | 4 527,805        | 4 520,232        | 3,347                 | 4 3,170 | 531,152   | 523,402   | 1,007,484.19  | 982,051.08   |
| North Carolina.....           | 78,211           | 65,966           | 672                   | 656     | 78,868    | 66,622    | 128,913.00    | 110,281.37   |
| North Dakota.....             | 28,654           | 4 37,335         | 67                    | 57      | 28,721    | 37,392    | 40,177.61     | 64,284.34    |
| Ohio.....                     | 389,190          | 379,768          | 40                    | 29      | 389,230   | 379,797   | 389,790.00    | 380,203.00   |
| Oklahoma.....                 | 92,086           | 91,858           | 722                   | 435     | 92,808    | 92,293    | 94,758.00     | 94,219.50    |
| Oregon.....                   | 4 50,868         | 4 50,563         | 342                   | 257     | 51,210    | 50,820    | 178,543.50    | 173,579.00   |
| Pennsylvania.....             | 537,451          | 524,337          | 5,251                 | 4,966   | 542,702   | 529,303   | 1,098,222.80  | 1,069,236.15 |
| Rhode Island.....             | 8,313            | 9,030            | 154                   | 166     | 8,467     | 9,166     | 18,202.00     | 19,661.00    |
| South Carolina.....           | 68,581           | 57,765           | 1,190                 | 1,335   | 69,771    | 59,100    | 113,257.00    | 99,730.00    |
| South Dakota.....             | 70,025           | 69,224           | 764                   | 714     | 70,789    | 69,938    | 97,845.00     | 93,986.00    |
| Tennessee.....                | 56,566           | 4 47,935         | 98                    | 67      | 56,664    | 48,002    | 89,985.11     | 82,347.53    |
| Texas.....                    | 89,841           | 85,000           | 321                   | 272     | 90,162    | 85,272    | 173,268.80    | 163,268.00   |
| Utah.....                     | 4 39,127         | 4 38,177         | 4 328                 | 408     | 39,455    | 38,585    | 85,615.50     | 83,123.50    |
| Vermont.....                  | 4 45,344         | 4 44,403         | 4 1,337               | 1,102   | 46,681    | 45,585    | 64,556.90     | 61,816.05    |
| Virginia.....                 | 4 121,156        | 4 125,024        | 1,250                 | 1,088   | 122,406   | 126,112   | 200,905.00    | 203,992.50   |
| Washington.....               | 4 167,086        | 4 126,668        | 100                   | 928     | 167,186   | 127,596   | 280,310.00    | 302,054.50   |
| West Virginia.....            | 129,836          | 4 144,757        | 4 138                 | 4 322   | 129,974   | 145,074   | 150,287.97    | 169,357.00   |
| Wisconsin.....                | 183,667          | 184,142          | 205                   | 173     | 183,872   | 184,315   | 192,216.65    | 170,053.00   |
| Wyoming.....                  | 4 19,508         | 4 16,943         | 4 247                 | 4 345   | 19,755    | 17,288    | 61,095.85     | 68,265.00    |
| Total.....                    | 5,739,688        | 5,702,061        | 36,946                | 36,947  | 5,776,634 | 5,741,965 | 9,122,699.10  | 8,754,827.57 |

<sup>1</sup> Figures are for the fiscal year or season ended during the year named.<sup>2</sup> None required.<sup>3</sup> Estimated for 1932.<sup>4</sup> Combined hunting and fishing license, or State and county license, or large- and small-game license.<sup>5</sup> Includes both resident and nonresident licenses, no separate record having been kept.<sup>6</sup> Includes 5,397 free licenses.<sup>7</sup> Correction of error in 1932 figures.

Biological Survey.

TABLE 520.—Mileage of roads in State highway systems, including Federal-aid system, at end of 1933, and total mileage 1921, 1923-32, as reported by State highway departments<sup>1</sup>

| State and year                   | Total system mileage | Earth non-surfaced |                   | Surfaced roads by types |                     |                     |   |                    |                     |                          |                 |
|----------------------------------|----------------------|--------------------|-------------------|-------------------------|---------------------|---------------------|---|--------------------|---------------------|--------------------------|-----------------|
|                                  |                      | Unimproved         | Improved to grade | Total surfaced mileage  | Sand-clay, top-soil | Gravel, chert, etc. | Water-bound macadam (treated and untreated) | Bituminous macadam | Bituminous concrete | Portland cement concrete | Brick and block |
|                                  | Miles                | Miles              | Miles             | Miles                   | Miles               | Miles               | Miles                                       | Miles              | Miles               | Miles                    | Miles           |
| Alabama.....                     | 5,552                | 765                | 677               | 4,110                   | 1,085               | 1,841               | 22  | 166                | 175                 | 821                      | -----           |
| Arizona.....                     | 2,895                | 458                | 241               | 2,188                   | -----               | 1,951               | -----                                       | 25                 | 69                  | 143                      | -----           |
| Arkansas.....                    | 9,020                | 707                | 818               | 7,495                   | -----               | 5,335               | -----                                       | 419                | 622                 | 1,119                    | -----           |
| California.....                  | 12,584               | 3,553              | 501               | 8,530                   | -----               | 3,523               | -----                                       | 1,205              | 1,318               | 2,484                    | -----           |
| Colorado.....                    | 9,421                | 3,951              | 379               | 5,091                   | 66                  | 4,532               | -----                                       | -----              | 15                  | 478                      | -----           |
| Connecticut.....                 | 2,352                | -----              | 50                | 2,302                   | -----               | 252                 | 950   | 331                | 155                 | 582                      | -----           |
| Delaware.....                    | 1,142                | -----              | -----             | 1,142                   | 48                  | 224                 | -----                                       | 45                 | 27                  | 732                      | 6               |
| Florida.....                     | 8,367                | 2,965              | 267               | 5,135                   | 868                 | 25                  | 2,779                                       | 155                | 432                 | 560                      | 316             |
| Georgia.....                     | 8,680                | 3,458              | 463               | 4,759                   | 1,336               | 761                 | 678   | 492                | 276                 | 1,206                    | 10              |
| Idaho.....                       | 4,806                | 1,003              | 461               | 3,342                   | 40                  | 2,988               | 75  | 29                 | 154                 | 56                       | -----           |
| Illinois.....                    | 10,099               | 408                | 107               | 9,584                   | -----               | 11                  | 1   | 5                  | 7                   | 9,310                    | 250             |
| Indiana.....                     | 8,439                | -----              | 137               | 8,302                   | -----               | 2,590               | 1,321                                       | 576                | 60                  | 3,651                    | 104             |
| Iowa.....                        | 7,834                | 358                | 52                | 7,424                   | -----               | 3,222               | -----                                       | -----              | -----               | 4,174                    | 28              |
| Kansas.....                      | 8,982                | 3,095              | 201               | 5,686                   | 2,296               | 1,974               | -----                                       | 183                | 3                   | 1,068                    | 162             |
| Kentucky.....                    | 7,319                | 651                | 682               | 5,986                   | -----               | 3,462               | 1,082                                       | 200                | 411                 | 876                      | 5               |
| Louisiana.....                   | 17,628               | 5,455              | 501               | 11,672                  | -----               | 9,474               | -----                                       | 12                 | 229                 | 1,951                    | 6               |
| Maine.....                       | 2,067                | 66                 | -----             | 2,021                   | -----               | 1,539               | -----                                       | 267                | -----               | 213                      | 2               |
| Maryland.....                    | 3,757                | -----              | -----             | 3,757                   | -----               | 645                 | 1,116                                       | 161                | 240                 | 1,594                    | 1               |
| Massachusetts.....               | 1,795                | -----              | -----             | 1,795                   | -----               | 51                  | 145   | 963                | 258                 | 377                      | 3               |
| Michigan.....                    | 8,668                | 399                | 122               | 8,147                   | 88                  | 3,541               | 454   | 86                 | 423                 | 3,544                    | 11              |
| Minnesota.....                   | 6,766                | 49                 | 41                | 6,676                   | 72                  | 4,092               | -----                                       | -----              | 80                  | 2,424                    | 8               |
| Mississippi.....                 | 6,094                | 158                | 689               | 5,287                   | 1                   | 4,584               | 10  | 52                 | 46                  | 561                      | 13              |
| Missouri.....                    | 12,226               | 924                | 554               | 10,748                  | -----               | 6,995               | -----                                       | 258                | 53                  | 3,423                    | 19              |
| Montana.....                     | 8,093                | 4,442              | 187               | 3,464                   | 86                  | 3,333               | -----                                       | 16                 | 3                   | 26                       | -----           |
| Nebraska.....                    | 9,770                | 2,856              | 190               | 6,724                   | -----               | 5,980               | -----                                       | -----              | 17                  | 676                      | 51              |
| Nevada.....                      | 4,007                | 1,728              | 58                | 2,221                   | -----               | 2,152               | -----                                       | 5                  | 35                  | 29                       | -----           |
| New Hampshire.....               | 2,948                | 5                  | 32                | 2,911                   | -----               | 2,365               | 94  | 168                | 43                  | 241                      | -----           |
| New Jersey.....                  | 1,872                | 115                | 25                | 1,732                   | -----               | 65                  | 53  | 7                  | 254                 | 1,301                    | 52              |
| New Mexico.....                  | 10,370               | 5,380              | 1,838             | 3,152                   | -----               | 3,036               | -----                                       | -----              | 14                  | 102                      | -----           |
| New York.....                    | 13,930               | 1,654              | 27                | 12,249                  | -----               | 146                 | 973   | 2,897              | 1,693               | 6,350                    | 190             |
| North Carolina.....              | 10,148               | 313                | 636               | 9,199                   | 1,582               | 3,300               | 476   | 106                | 1,064               | 2,658                    | 11              |
| North Dakota.....                | 7,604                | 1,161              | 836               | 5,607                   | -----               | 5,576               | -----                                       | -----              | 1                   | 80                       | -----           |
| Ohio.....                        | 11,845               | 57                 | -----             | 11,788                  | -----               | 4,223               | 1,061                                       | 1,610              | 714                 | 2,721                    | 1,459           |
| Oklahoma.....                    | 7,420                | 1,306              | 714               | 5,400                   | -----               | 3,367               | -----                                       | -----              | 275                 | 1,719                    | -----           |
| Oregon.....                      | 4,751                | 275                | 339               | 4,137                   | -----               | 2,530               | -----                                       | 676                | 683                 | 248                      | -----           |
| Pennsylvania <sup>2</sup> .....  | 34,009               | 11,790             | -----             | 22,219                  | -----               | 10,362              | 3,619                                       | 622                | 746                 | 6,329                    | 541             |
| Rhode Island.....                | 1,086                | 223                | 185               | 678                     | -----               | 76                  | 92  | 242                | 116                 | 152                      | -----           |
| South Carolina.....              | 5,954                | 123                | 64                | 5,767                   | 2,640               | 693                 | 43  | 4                  | 445                 | 1,942                    | -----           |
| South Dakota.....                | 5,951                | 358                | 662               | 4,941                   | 21                  | 4,732               | -----                                       | -----              | 5                   | 183                      | -----           |
| Tennessee.....                   | 7,212                | 282                | 457               | 6,473                   | -----               | 3,117               | 897   | 525                | 607                 | 1,308                    | 19              |
| Texas.....                       | 19,737               | 3,528              | 2,392             | 13,817                  | 10                  | 2,415               | 90  | 5,695              | 1,771               | 3,784                    | 52              |
| Utah.....                        | 4,622                | 601                | 1,250             | 2,771                   | -----               | 2,375               | -----                                       | 6                  | 89                  | 301                      | -----           |
| Vermont.....                     | 1,013                | -----              | -----             | 1,013                   | -----               | 439                 | 5   | 298                | -----               | 271                      | -----           |
| Virginia.....                    | 8,974                | 997                | 304               | 7,673                   | 537                 | 3,408               | 1,869                                       | 745                | 76                  | 738                      | -----           |
| Washington.....                  | 3,805                | 180                | 55                | 3,570                   | -----               | 2,302               | -----                                       | 140                | 77                  | 1,036                    | 15              |
| West Virginia <sup>3</sup> ..... | 33,546               | 23,304             | 2,819             | 7,423                   | -----               | 3,396               | 1,718                                       | 759                | 165                 | 1,296                    | 89              |
| Wisconsin.....                   | 10,104               | -----              | 604               | 9,500                   | 47                  | 4,563               | 472   | 186                | 54                  | 4,177                    | 1               |
| Wyoming.....                     | 3,398                | 460                | 355               | 2,533                   | -----               | 2,548               | -----                                       | -----              | 27                  | 8                        | -----           |
| Total, 1933.....                 | 398,692              | 89,569             | 20,952            | 238,171                 | 11,123              | 140,141             | 20,045                                      | 20,339             | 14,025              | 79,033                   | 3,465           |
| Total:                           |                      |                    |                   |                         |                     |                     |   |                    |                     |                          |                 |
| 1932.....                        | 358,210              | 72,743             | 19,407            | 266,060                 | 13,158              | 123,870             | 19,297                                      | 20,009             | 12,179              | 73,984                   | 3,563           |
| 1931.....                        | 328,942              | 61,319             | 24,923            | 242,700                 | 14,402              | 112,800             | 19,157                                      | 15,356             | 10,812              | 67,348                   | 3,325           |
| 1930.....                        | 324,498              | 69,910             | 27,816            | 226,772                 | 15,153              | 107,277             | 20,229                                      | 14,590             | 8,071               | 65,208                   | 3,244           |
| 1929.....                        | 314,163              | 77,259             | 28,899            | 208,005                 | 15,442              | 98,947              | 18,891                                      | 14,064             | 7,234               | 50,169                   | 3,263           |
| 1928.....                        | 306,442              | 81,549             | 31,755            | 193,138                 | 13,499              | 93,124              | 18,142                                      | 15,200             | 6,890               | 42,957                   | 3,326           |
| 1927.....                        | 293,353              | 86,817             | 29,970            | 176,566                 | 12,581              | 86,095              | 17,762                                      | 13,496             | 6,398               | 36,915                   | 3,326           |
| 1926.....                        | 267,928              | 96,413             | 28,456            | 163,059                 | 11,896              | 79,286              | 18,428                                      | 12,927             | 5,705               | 31,636                   | 3,321           |
| 1925.....                        | 274,911              | 103,271            | 28,736            | 144,854                 | 11,025              | 68,771              | 16,709                                      | 12,105             | 5,414               | 27,645                   | 3,185           |
| 1924.....                        | 261,216              | 94,651             | 34,456            | 132,109                 | 10,440              | 63,158              | 17,063                                      | 10,346             | 5,211               | 22,525                   | 3,090           |
| 1923.....                        | 251,611              | 103,843            | 36,368            | 111,400                 | 8,875               | 52,917              | 15,422                                      | 8,847              | 4,558               | 17,916                   | 2,865           |
| 1921.....                        | 209,242              | 102,963            | 21,421            | 84,853                  | 8,622               | 36,493              | 16,978                                      | 6,749              | 2,840               | 10,114                   | 2,089           |

<sup>1</sup> Includes municipal streets connecting State highways in a majority of States.<sup>2</sup> Includes secondary State system.<sup>3</sup> Includes 1,008 miles of miscellaneous surfacing not allocated by types.

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TABLE 521.—Total State highway income and funds available, 1933, as reported by State authorities

| State                             | Total funds available | Balances at first of year | Total income for State highways | Current revenue from State sources |                    |                       |                       | Contributions from other than State sources |                                       | Loans         |
|-----------------------------------|-----------------------|---------------------------|---------------------------------|------------------------------------|--------------------|-----------------------|-----------------------|---|---------------------------------------|---------------|
|                                   |                       |                           |                                 | State taxes and appropriations     | Motor-vehicle fees | Gasoline-tax receipts | Miscellaneous revenue | Federal payments and advances               | Transfers from local government units |               |
|                                   | 1,000 dollars         | 1,000 dollars             | 1,000 dollars                   | 1,000 dollars                      | 1,000 dollars      | 1,000 dollars         | 1,000 dollars         | 1,000 dollars                               | 1,000 dollars                         | 1,000 dollars |
| Alabama.....                      | 10,983                | 218                       | 10,765                          |                                    | 2,150              | 3,757                 | 247                   | 4,610                                       |                                       |               |
| Arizona.....                      | 5,770                 | 61                        | 5,709                           | 473                                | 647                | 1,649                 | 52                    | 2,888                                       |                                       |               |
| Arkansas.....                     | 7,913                 | -2,825                    | 10,738                          |                                    | 1,660              | 4,821                 | 258                   | 3,999                                       |                                       |               |
| California.....                   | 48,568                | 9,717                     | 88,851                          | 4,348                              | 3,363              | 23,850                |                       | 7,109                                       | 181                                   |               |
| Colorado.....                     | 9,971                 | 1,356                     | 8,615                           | 387                                | 215                | 3,664                 | 89                    | 4,260                                       |                                       |               |
| Connecticut.....                  | 15,657                | 3,511                     | 12,146                          |                                    | 6,600              | 4,500                 | 177                   | 569   | 300                                   |               |
| Delaware.....                     | 4,480                 | 1,029                     | 3,451                           | 1,000                              | 997                | 1,035                 | 17                    | 402   |                                       |               |
| Florida.....                      | 10,158                | 533                       | 9,625                           |                                    | 2                  | 6,083                 | 23                    | 3,892                                       | 145                                   |               |
| Georgia.....                      | 16,011                | 1,731                     | 14,280                          |                                    | 1,121              | 7,790                 | 23                    | 5,065                                       | 281                                   |               |
| Idaho.....                        | 5,633                 | 54                        | 5,579                           | 331                                | 135                | 2,247                 | 17                    | 2,774                                       | 75                                    |               |
| Illinois.....                     | 57,699                | 15,116                    | 42,583                          | 24                                 | 15,273             | 19,742                | 108                   | 7,271                                       | 165                                   |               |
| Indiana <sup>1</sup> .....        | 17,106                | 6,595                     | 10,511                          |                                    | 2,430              | 6,610                 | 198                   | 1,223                                       | 50                                    |               |
| Iowa.....                         | 22,922                | 3,084                     | 19,838                          |                                    | 9,909              | 5,290                 | 1                     | 3,828                                       |                                       | 810           |
| Kansas.....                       | 15,092                | 2,762                     | 12,330                          |                                    | 1,357              | 5,693                 | 13                    | 5,122                                       | 145                                   |               |
| Kentucky.....                     | 18,027                | 718                       | 17,309                          | 732                                | 2,623              | 8,374                 | 869                   | 4,548                                       | 163                                   |               |
| Louisiana.....                    | 27,769                | 2,885                     | 24,884                          |                                    | 4,163              | 6,434                 | 710                   | 3,572                                       | 5                                     | 10,000        |
| Maine.....                        | 13,296                | 1,246                     | 12,050                          |                                    | 2,755              | 4,010                 | 231                   | 2,995                                       | 1,103                                 | 956           |
| Maryland.....                     | 15,411                | 2,275                     | 13,136                          | 2,702                              | 2,385              | 6,210                 | 266                   | 1,425                                       | 148                                   |               |
| Massachusetts.....                | 23,728                | 6,384                     | 17,344                          |                                    | 4,216              | 8,877                 | 369                   | 3,375                                       | 507                                   |               |
| Michigan.....                     | 29,533                | 277                       | 29,306                          |                                    | 8,055              | 14,991                | 505                   | 5,557                                       | 498                                   |               |
| Minnesota.....                    | 19,533                | 1,670                     | 17,863                          | 1,556                              | 5,649              | 6,559                 | 230                   | 3,869                                       |                                       |               |
| Mississippi <sup>1</sup> .....    | 7,667                 | 197                       | 7,470                           |                                    | 107                | 2,629                 | 17                    | 4,519                                       | 198                                   |               |
| Missouri.....                     | 37,393                | 8,114                     | 29,279                          | 9                                  | 8,889              | 9,028                 | 677                   | 5,553                                       | 37                                    | 5,086         |
| Montana.....                      | 7,645                 | 39                        | 7,606                           |                                    |                    | 2,578                 | 24                    | 4,979                                       | 25                                    |               |
| Nebraska.....                     | 11,998                | 449                       | 11,549                          | 50                                 | 577                | 5,203                 |                       | 5,701                                       | 18                                    |               |
| Nevada.....                       | 3,790                 | -190                      | 3,980                           | 91                                 | 283                | 675                   | 24                    | 2,582                                       | 20                                    | 300           |
| New Hampshire.....                | 8,438                 |                           | 7,675                           | 109                                | 2,011              | 2,650                 | 164                   | 586   | 255                                   | 1,900         |
| New Jersey.....                   | 39,442                | 16,437                    | 22,985                          | 6,026                              | 9,765              | 4,216                 | 74                    | 2,748                                       |                                       | 156           |
| New Mexico.....                   | 7,979                 | 523                       | 7,456                           | 82                                 | 287                | 2,215                 | 94                    | 4,190                                       | 88                                    | 500           |
| New York.....                     | 73,887                | 44,002                    | 29,885                          | 6,527                              | 4,576              | 3,599                 | 6                     | 7,847                                       | 324                                   | 6,706         |
| North Carolina.....               | 23,293                | 611                       | 22,682                          |                                    | 4,791              | 14,165                | 112                   | 3,614                                       |                                       |               |
| North Dakota.....                 | 5,464                 | 576                       | 4,888                           |                                    | 110                | 1,210                 | 145                   | 3,114                                       | 209                                   | 100           |
| Ohio.....                         | 28,221                | 2,846                     | 25,375                          |                                    | 3,911              | 15,191                | 244                   | 5,896                                       | 133                                   |               |
| Oklahoma.....                     | 13,229                | 1,157                     | 12,072                          |                                    | 1,781              | 5,137                 | 130                   | 4,888                                       | 136                                   |               |
| Oregon.....                       | 13,896                | 1,202                     | 12,694                          |                                    | 2,249              | 5,954                 | 21                    | 2,724                                       | 195                                   | 1,461         |
| Pennsylvania.....                 | 86,565                | 17,627                    | 68,938                          |                                    | 28,288             | 25,618                | 6,161                 | 8,090                                       | 781                                   |               |
| Rhode Island.....                 | 5,531                 | 766                       | 4,765                           |                                    | 2,150              | 1,770                 | 43                    | 802   |                                       |               |
| South Carolina <sup>2</sup> ..... | 8,549                 | 3,432                     | 5,417                           |                                    | 1,127              | 2,524                 | 428                   | 1,311                                       | 27                                    |               |
| South Dakota.....                 | 5,192                 | 227                       | 4,965                           |                                    | 421                | 1,861                 | 13                    | 2,670                                       |                                       |               |
| Tennessee.....                    | 22,296                | 8,309                     | 13,987                          | 267                                | 2,207              | 6,793                 | 702                   | 4,018                                       |                                       |               |
| Texas.....                        | 44,677                | 11,468                    | 33,209                          |                                    | 4,665              | 14,616                | 421                   | 12,221                                      | 1,286                                 |               |
| Utah.....                         | 6,424                 | 276                       | 6,148                           | 348                                | 834                | 2,120                 | 30                    | 2,816                                       |                                       |               |
| Vermont.....                      | 6,532                 | 947                       | 5,585                           | 784                                | 2,015              | 1,818                 | 81                    | 773   | 114                                   |               |
| Virginia.....                     | 21,672                | 2,687                     | 18,985                          |                                    | 4,928              | 10,921                | 344                   | 2,742                                       | 50                                    |               |
| Washington.....                   | 13,962                | -184                      | 14,146                          |                                    | 2,167              | 8,320                 | 148                   | 3,248                                       | 263                                   |               |
| West Virginia.....                | 16,785                | 3,177                     | 13,608                          | 1,800                              | 3,807              | 5,070                 |                       | 2,931                                       |                                       |               |
| Wisconsin.....                    | 34,190                | 6,759                     | 27,431                          |                                    | 8,190              | 12,611                | 115                   | 4,617                                       | 1,898                                 |               |
| Wyoming.....                      | 4,797                 | 136                       | 4,661                           | 67                                 | 671                | 1,056                 |                       | 2,611                                       | 41                                    |               |
| Total.....                        | 955,124               | 190,860                   | 764,264                         | 27,713                             | 176,817            | 321,414               | 14,836                | 185,644                                     | 9,865                                 | 27,975        |

<sup>1</sup> For 9-month period only.<sup>2</sup> For 11-month period only.<sup>3</sup> For 6-month period only.

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TABLE 522.—Total State highway and bridge disbursements, 1933, as reported by State authorities

| State                             | Grand<br>total<br>dis-<br>burse-<br>ments | Expenditures for State highway purposes |   |                  |                                      |                                     |                         | Other disbursements by<br>State highway de-<br>partments |                               |                                  |  |
|-----------------------------------|---|---|---|------------------|--------------------------------------|-------------------------------------|-------------------------|--|-------------------------------|----------------------------------|--|
|                                   |   | Total<br>expend-<br>itures              | Capital<br>invest-<br>ment in<br>con-<br>struction<br>and<br>right-<br>of-way | Main-<br>tenance | Equip-<br>ment<br>and ma-<br>chinery | Miscel-<br>laneous<br>ex-<br>penses | Interest<br>on<br>bonds | Retire-<br>ment of<br>bonds                              | Trans-<br>fers to<br>counties | Other<br>dis-<br>burse-<br>ments |  |
|                                   | 1,000<br>dollars                          | 1,000<br>dollars                        | 1,000<br>dollars  | 1,000<br>dollars | 1,000<br>dollars                     | 1,000<br>dollars                    | 1,000<br>dollars        | 1,000<br>dollars   | 1,000<br>dollars              | 1,000<br>dollars                 |  |
| Alabama.....                      | 10,711                                    | 9,411                                   | 5,202   | 1,477            | 244                                  | 398                                 | 2,090                   | 1,120  | -----                         | 180                              |  |
| Arizona.....                      | 5,491                                     | 5,239                                   | 4,039   | 918              | 245                                  | 34                                  | -----                   | -----  | -----                         | 252                              |  |
| Arkansas.....                     | 7,274                                     | 6,735                                   | 3,922   | 1,584            | 251                                  | -----                               | 978                     | -----  | -----                         | 539                              |  |
| California.....                   | 37,594                                    | 35,696                                  | 26,791  | 6,123            | 208                                  | -----                               | 2,574                   | 1,775  | 62                            | 61                               |  |
| Colorado.....                     | 9,666                                     | 7,970                                   | 6,342   | 1,315            | 71                                   | 37                                  | 205                     | 1,726  | -----                         | -----                            |  |
| Connecticut.....                  | 11,788                                    | 8,554                                   | 5,193   | 2,756            | 1-199                                | 804                                 | -----                   | -----  | 2,975                         | 259                              |  |
| Delaware.....                     | 4,138                                     | 2,988                                   | 2,235   | 273              | 35                                   | -----                               | 445                     | 1,012  | -----                         | 138                              |  |
| Florida.....                      | 9,126                                     | 9,063                                   | 7,145   | 1,731            | 207                                  | -----                               | -----                   | 18   | -----                         | 25                               |  |
| Georgia.....                      | 14,537                                    | 13,348                                  | 11,687  | 928              | 733                                  | -----                               | -----                   | -----  | -----                         | 1,189                            |  |
| Idaho.....                        | 5,193                                     | 4,714                                   | 3,607   | 923              | 86                                   | -----                               | 98                      | 393  | -----                         | 86                               |  |
| Illinois.....                     | 40,194                                    | 36,261                                  | 26,466  | 3,469            | 183                                  | 383                                 | 5,760                   | 2,490  | 684                           | 809                              |  |
| Indiana <sup>1</sup> .....        | 8,800                                     | 8,800                                   | 5,083   | 3,559            | 158                                  | -----                               | -----                   | -----  | -----                         | -----                            |  |
| Iowa.....                         | 18,122                                    | 16,054                                  | 8,956   | 2,211            | 458                                  | 1                                   | 4,428                   | 2,068  | -----                         | -----                            |  |
| Kansas.....                       | 12,878                                    | 11,755                                  | 8,154   | 2,738            | 863                                  | -----                               | -----                   | -----  | 957                           | 166                              |  |
| Kentucky.....                     | 18,169                                    | 17,788                                  | 11,472  | 3,975            | 1,818                                | 39                                  | 484                     | 877  | -----                         | 4                                |  |
| Louisiana.....                    | 25,781                                    | 16,501                                  | 9,730   | 2,152            | 288                                  | 437                                 | 3,894                   | 8,624  | -----                         | 656                              |  |
| Maine.....                        | 10,490                                    | 7,173                                   | 4,089   | 1,869            | 1-59                                 | 82                                  | 1,192                   | 908  | 2,271                         | 138                              |  |
| Maryland.....                     | 13,788                                    | 10,497                                  | 7,165   | 2,307            | 78                                   | 143                                 | 804                     | 1,897  | 1,343                         | 51                               |  |
| Massachusetts.....                | 18,289                                    | 14,855                                  | 9,687   | 4,787            | 87                                   | 55                                  | 239                     | 204  | 2,933                         | 297                              |  |
| Michigan.....                     | 24,272                                    | 22,273                                  | 16,380  | 4,793            | -----                                | -----                               | 1,100                   | 1,834  | 8                             | 157                              |  |
| Minnesota.....                    | 17,079                                    | 14,592                                  | 9,465   | 3,035            | 144                                  | -----                               | 1,948                   | 877  | 1,610                         | -----                            |  |
| Mississippi <sup>2</sup> .....    | 7,591                                     | 7,551                                   | 5,636   | 1,752            | 163                                  | -----                               | -----                   | -----  | 15                            | 25                               |  |
| Missouri.....                     | 34,502                                    | 31,176                                  | 22,646  | 2,693            | 1,403                                | -----                               | 4,434                   | 3,000  | -----                         | 326                              |  |
| Montana.....                      | 7,480                                     | 7,480                                   | 6,251   | 1,092            | 69                                   | -----                               | 68                      | -----  | -----                         | -----                            |  |
| Nebraska.....                     | 11,124                                    | 11,112                                  | 8,819   | 2,205            | 88                                   | -----                               | -----                   | -----  | -----                         | 12                               |  |
| Nevada.....                       | 3,848                                     | 3,706                                   | 3,109   | 547              | -----                                | 23                                  | 27                      | 126  | -----                         | 16                               |  |
| New Hampshire.....                | 7,471                                     | 5,907                                   | 2,882   | 2,695            | 68                                   | -----                               | 262                     | 575  | -----                         | 39                               |  |
| New Jersey.....                   | 28,378                                    | 18,437                                  | 12,022  | 2,260            | 1-98                                 | -----                               | 4,263                   | 3,300  | 6,641                         | -----                            |  |
| New Mexico.....                   | 7,605                                     | 6,339                                   | 4,713   | 1,173            | -----                                | 43                                  | 410                     | 850  | -----                         | 416                              |  |
| New York.....                     | 42,206                                    | 40,910                                  | 25,042  | 9,204            | 1,337                                | -----                               | 5,327                   | 1,200  | -----                         | 96                               |  |
| North Carolina.....               | 20,475                                    | 11,337                                  | 4,734   | 2,138            | 1-342                                | 112                                 | 4,695                   | 3,750  | 4,761                         | 627                              |  |
| North Dakota.....                 | 5,074                                     | 4,809                                   | 3,704   | 1,061            | 26                                   | 18                                  | -----                   | -----  | 60                            | 205                              |  |
| Ohio.....                         | 20,705                                    | 20,673                                  | 11,444  | 9,155            | 74                                   | -----                               | -----                   | -----  | -----                         | 32                               |  |
| Oklahoma.....                     | 14,524                                    | 14,524                                  | 12,479  | 1,830            | 180                                  | 55                                  | -----                   | -----  | -----                         | -----                            |  |
| Oregon.....                       | 12,660                                    | 8,797                                   | 5,363   | 2,109            | 1-123                                | 155                                 | 1,293                   | 1,975  | 1,600                         | 288                              |  |
| Pennsylvania.....                 | 66,676                                    | 59,021                                  | 35,761  | 13,664           | 4,683                                | 1,060                               | 3,853                   | 6,052  | 21                            | 1,582                            |  |
| Rhode Island.....                 | 5,347                                     | 4,268                                   | 3,141   | 857              | 23                                   | 4                                   | 243                     | -----  | 53                            | 1,026                            |  |
| South Carolina <sup>3</sup> ..... | 8,125                                     | 4,380                                   | 1,560   | 641              | 9                                    | 147                                 | 2,023                   | 1,891  | -----                         | 1,854                            |  |
| South Dakota.....                 | 4,509                                     | 4,408                                   | 3,152   | 1,235            | 6                                    | 15                                  | -----                   | -----  | 86                            | 15                               |  |
| Tennessee.....                    | 15,357                                    | 14,907                                  | 8,131   | 1,449            | 1,252                                | 73                                  | 4,002                   | 13   | -----                         | 437                              |  |
| Texas.....                        | 40,650                                    | 39,515                                  | 28,703  | 10,555           | 257                                  | -----                               | -----                   | -----  | -----                         | 1,135                            |  |
| Utah.....                         | 6,084                                     | 5,608                                   | 4,142   | 1,157            | 1-40                                 | 24                                  | 325                     | 412  | -----                         | 64                               |  |
| Vermont.....                      | 5,511                                     | 4,612                                   | 2,936   | 1,413            | -----                                | -----                               | 263                     | 400  | 499                           | -----                            |  |
| Virginia.....                     | 20,669                                    | 13,450                                  | 7,835   | 4,950            | -----                                | 437                                 | 228                     | -----  | 6,519                         | 700                              |  |
| Washington.....                   | 11,032                                    | 8,911                                   | 6,502   | 2,209            | 175                                  | 25                                  | -----                   | -----  | 2,121                         | -----                            |  |
| West Virginia.....                | 13,521                                    | 9,861                                   | 4,968   | 2,333            | 157                                  | -----                               | 2,403                   | 3,660  | -----                         | -----                            |  |
| Wisconsin.....                    | 32,112                                    | 19,905                                  | 15,115  | 4,777            | 13                                   | -----                               | -----                   | 3,617  | 6,678                         | 2,912                            |  |
| Wyoming.....                      | 4,360                                     | 4,171                                   | 3,241   | 753              | 1-15                                 | 19                                  | 173                     | 165  | -----                         | 24                               |  |
| Total.....                        | 732,006                                   | 666,062                                 | 446,841   | 133,830          | 15,247                               | 4,623                               | 60,521                  | 56,309   | 42,797                        | 16,838                           |  |

<sup>1</sup> Equipment rentals exceeded equipment expense.<sup>2</sup> For 9-month period only.<sup>3</sup> For 11-month period only.<sup>4</sup> For 6-month period only.

Bureau of Public Roads.

TABLE 523.—*Motor-vehicle registration and revenues, by States, 1933, and totals for 1925-32, as reported by State authorities*

| State                     | Registered motor vehicles |                                    |                                | Gross registration receipts | Disposition of gross receipts <sup>1</sup> |                                 |                      |                                 |
|---------------------------|---------------------------|------------------------------------|--------------------------------|-----------------------------|--|---------------------------------|----------------------|---------------------------------|
|                           | All motor cars and trucks | Passenger autos, taxis, and busses | Motor trucks and road tractors |                             | Collection costs                           | Construction, maintenance, etc. |                      | On road bonds and miscellaneous |
|                           |                           |                                    |                                |                             |  | State highways <sup>1</sup>     | Local roads          |                                 |
|                           | <i>Number</i>             | <i>Number</i>                      | <i>Number</i>                  | <i>1,000 dollars</i>        | <i>1,000 dollars</i>                       | <i>1,000 dollars</i>            | <i>1,000 dollars</i> | <i>1,000 dollars</i>            |
| Alabama.....              | 206,361                   | 176,523                            | 29,838                         | 2,724                       | 141  | 987                             | 531                  | 1,065                           |
| Arizona.....              | 89,496                    | 74,927                             | 14,569                         | 648                         | 172  | 476                             | ---                  | ---                             |
| Arkansas.....             | 188,242                   | 155,262                            | 32,980                         | 1,769                       | 76   | 1,069                           | ---                  | 624                             |
| California.....           | 1,958,807                 | 1,738,720                          | 220,087                        | 9,866                       | 1,722                                      | 2,902                           | 2,902                | 2,340                           |
| Colorado.....             | 266,491                   | 239,058                            | 27,433                         | 2,036                       | 139  | 604                             | 610                  | 683                             |
| Connecticut.....          | 314,751                   | 262,187                            | 52,564                         | 7,851                       | 1,018                                      | 6,833                           | ---                  | ---                             |
| Delaware.....             | 51,099                    | 42,614                             | 8,485                          | 1,014                       | ---  | 799                             | ---                  | 215                             |
| Florida.....              | 279,265                   | 234,246                            | 45,019                         | 4,995                       | 396  | ---                             | ---                  | 4,599                           |
| Georgia.....              | 330,147                   | 278,935                            | 51,212                         | 1,036                       | 138  | 898                             | ---                  | ---                             |
| Idaho.....                | 96,255                    | 81,371                             | 14,884                         | 1,402                       | 105  | 124                             | 1,173                | ---                             |
| Illinois.....             | 1,463,080                 | 1,276,864                          | 186,186                        | 16,229                      | 272  | 5,599                           | 1,030                | 29,328                          |
| Indiana.....              | 770,069                   | 653,709                            | 116,360                        | 6,468                       | 269  | 2,751                           | 1,101                | 2,347                           |
| Iowa.....                 | 632,292                   | 562,802                            | 69,490                         | 10,696                      | 435  | 9,905                           | ---                  | 356                             |
| Kansas.....               | 517,987                   | 445,583                            | 72,404                         | 3,057                       | 199  | 1,058                           | 1,800                | ---                             |
| Kentucky.....             | 294,547                   | 262,436                            | 32,111                         | 4,174                       | 236  | 3,387                           | 551                  | ---                             |
| Louisiana.....            | 232,688                   | 190,681                            | 42,007                         | 4,053                       | 131  | 3,602                           | ---                  | 320                             |
| Maine.....                | 168,173                   | 132,902                            | 35,271                         | 2,909                       | 490  | 515                             | ---                  | 1,904                           |
| Maryland.....             | 313,274                   | 278,546                            | 34,728                         | 3,581                       | 559  | 2,115                           | ---                  | 2,907                           |
| Massachusetts.....        | 789,788                   | 689,934                            | 99,854                         | 6,508                       | 1,512                                      | 2,402                           | 764                  | 21,830                          |
| Michigan.....             | 1,077,209                 | 955,570                            | 121,639                        | 18,560                      | 793  | 10,145                          | 6,000                | 1,622                           |
| Minnesota.....            | 679,243                   | 580,113                            | 99,130                         | 6,367                       | 298  | 2,806                           | ---                  | 3,263                           |
| Mississippi.....          | 164,688                   | 131,764                            | 32,924                         | 1,870                       | 99   | 103                             | 1,668                | ---                             |
| Missouri.....             | 698,362                   | 594,567                            | 103,795                        | 9,357                       | 331  | 1,591                           | ---                  | 7,435                           |
| Montana.....              | 110,245                   | 82,765                             | 27,480                         | 1,070                       | 43   | ---                             | 1,027                | ---                             |
| Nebraska.....             | 390,651                   | 336,704                            | 53,947                         | 1,722                       | 72   | 495                             | 1,155                | ---                             |
| Nevada.....               | 28,324                    | 22,397                             | 5,927                          | 300                         | 43   | 82                              | ---                  | 175                             |
| New Hampshire.....        | 107,631                   | 87,759                             | 19,872                         | 2,167                       | 97   | 2,070                           | ---                  | ---                             |
| New Jersey.....           | 845,734                   | 723,506                            | 122,228                        | 15,378                      | 1,548                                      | 2,500                           | 7,200                | 4,130                           |
| New Mexico.....           | 76,643                    | 61,353                             | 15,290                         | 867                         | 93   | 287                             | 93                   | 194                             |
| New York.....             | 2,240,787                 | 1,942,249                          | 298,508                        | 42,313                      | 3,896                                      | 8,475                           | 5,765                | 24,682                          |
| North Carolina.....       | 382,808                   | 332,648                            | 49,660                         | 5,556                       | 179  | 1,248                           | 1,194                | 2,735                           |
| North Dakota.....         | 153,889                   | 128,547                            | 25,342                         | 1,382                       | 93   | 14                              | 175                  | 1,100                           |
| Ohio.....                 | 1,534,314                 | 1,396,125                          | 188,189                        | 17,678                      | 506  | 3,805                           | 10,014               | 3,353                           |
| Oklahoma.....             | 451,712                   | 385,755                            | 65,957                         | 3,382                       | 171  | 1,282                           | 1,754                | 1,175                           |
| Oregon.....               | 239,410                   | 207,202                            | 32,208                         | 5,337                       | 263  | 2,069                           | 1,149                | 1,836                           |
| Pennsylvania.....         | 1,635,019                 | 1,415,522                          | 219,497                        | 29,185                      | 3,882                                      | 16,988                          | ---                  | 1,000                           |
| Rhode Island.....         | 136,261                   | 118,296                            | 17,965                         | 2,198                       | 292  | 853                             | 53                   | 8,315                           |
| South Carolina.....       | 162,735                   | 144,940                            | 17,795                         | 2,503                       | 69   | 437                             | ---                  | 1,997                           |
| South Dakota.....         | 169,249                   | 146,485                            | 22,764                         | 1,459                       | 53   | 283                             | 1,123                | ---                             |
| Tennessee.....            | 312,180                   | 278,332                            | 33,848                         | 2,940                       | 120  | 1,337                           | 1,337                | 146                             |
| Texas.....                | 1,201,762                 | 1,013,086                          | 188,676                        | 12,748                      | 633  | 3,899                           | 8,216                | ---                             |
| Utah.....                 | 100,362                   | 84,014                             | 16,348                         | 798                         | 60   | ---                             | ---                  | 728                             |
| Vermont.....              | 73,576                    | 65,652                             | 7,924                          | 2,073                       | 112  | 1,438                           | 270                  | 253                             |
| Virginia.....             | 344,704                   | 288,048                            | 56,656                         | 6,090                       | 615  | 5,475                           | ---                  | ---                             |
| Washington.....           | 427,406                   | 364,858                            | 62,548                         | 2,483                       | 410  | 1,401                           | 511                  | 161                             |
| West Virginia.....        | 226,985                   | 193,570                            | 33,415                         | 3,838                       | 149  | ---                             | ---                  | 3,689                           |
| Wisconsin.....            | 670,797                   | 566,450                            | 104,347                        | 9,768                       | 768  | 4,009                           | 2,213                | 2,778                           |
| Wyoming.....              | 52,560                    | 41,917                             | 10,643                         | 679                         | 13   | 500                             | ---                  | 166                             |
| District of Columbia..... | 149,790                   | 133,048                            | 16,742                         | 626                         | 85   | ---                             | ---                  | 541                             |
| Total, 1933.....          | 23,827,238                | 20,600,542                         | 3,226,746                      | 301,315                     | 23,316                                     | 119,618                         | 61,379               | 97,002                          |
| Total:                    |                           |                                    |                                |                             |  |                                 |                      |                                 |
| 1932.....                 | 24,114,977                | 20,883,625                         | 3,231,352                      | 324,274                     | 17,551                                     | 155,912                         | 75,964               | 74,847                          |
| 1931.....                 | 25,814,103                | 22,348,023                         | 3,466,080                      | 344,338                     | 19,689                                     | 200,734                         | 70,043               | 53,872                          |
| 1930.....                 | 26,545,281                | 23,059,262                         | 3,486,019                      | 355,705                     | 19,197                                     | 222,147                         | 68,578               | 45,783                          |
| 1929.....                 | 26,501,443                | 23,121,589                         | 3,379,854                      | 347,844                     | 17,403                                     | 228,203                         | 66,861               | 40,287                          |
| 1928.....                 | 24,493,124                | 21,379,125                         | 3,113,999                      | 322,630                     | 15,134                                     | 208,880                         | 60,399               | 38,217                          |
| 1927.....                 | 23,133,241                | 20,219,223                         | 2,914,018                      | 301,061                     | 14,876                                     | 189,985                         | 53,578               | 32,622                          |
| 1926.....                 | 22,001,393                | 19,237,171                         | 2,764,222                      | 288,282                     | 16,602                                     | 191,111                         | 51,702               | 28,867                          |
| 1925.....                 | 19,937,274                | 17,496,420                         | 2,440,854                      | 260,620                     | 11,993                                     | 177,707                         | 48,396               | 22,524                          |

<sup>1</sup> These figures are not comparable with those on highway income table.<sup>2</sup> Includes amount allocated to city streets.<sup>3</sup> Includes \$10,319,000 to city streets.

Bureau of Public Roads.

TABLE 524.—Gasoline taxes, by States, 1933, and totals for 1925-32, as reported by State authorities

| State                     | Total tax<br>(refunds deducted) | Disposition of total taxes collected |                             |               |                                     |                                | Gallons consumed by motor vehicles | Tax rate per gallon |
|---------------------------|---------------------------------|--------------------------------------|-----------------------------|---------------|-------------------------------------|--------------------------------|------------------------------------|---------------------|
|                           |                                 | Collection costs                     | Construction, etc.          |               | State and county road-bond payments | Miscellaneous and city streets |                                    |                     |
|                           |                                 |                                      | State highways <sup>1</sup> | Local roads   |                                     |                                |                                    |                     |
|                           | 1,000 dollars                   | 1,000 dollars                        | 1,000 dollars               | 1,000 dollars | 1,000 dollars                       | 1,000 dollars                  | 1,000 gallons                      | Cents               |
| Alabama.....              | 8,033                           | 18                                   | 2,508                       | 4,002         | 1,505                               |                                | 133,886                            | 6                   |
| Arizona.....              | 2,679                           |                                      | 1,608                       | 924           |                                     | 147                            | 53,581                             | 5                   |
| Arkansas.....             | 5,998                           | 220                                  | 1,376                       | 640           | 3,448                               | 316                            | 114,792                            | 6                   |
| California.....           | 35,217                          | 82                                   | 22,817                      | 12,037        |                                     | 281                            | 1,173,905                          | 3                   |
| Colorado.....             | 5,325                           | 61                                   | 3,685                       | 1,421         |                                     | 158                            | 133,125                            | 4                   |
| Connecticut.....          | 4,857                           |                                      | 4,857                       |               |                                     |                                | 240,581                            | 2                   |
| Delaware.....             | 1,130                           |                                      | 851                         |               | 279                                 |                                | 37,578                             | 3                   |
| Florida.....              | 14,293                          | 21                                   | 6,107                       |               | 6,107                               | 2,058                          | 208,562                            | 7                   |
| Georgia.....              | 12,635                          | 63                                   | 8,381                       | 2,095         |                                     | 2,096                          | 210,575                            | 6                   |
| Idaho.....                | 2,283                           | 12                                   | 2,055                       |               | 216                                 |                                | 45,497                             | 5                   |
| Illinois.....             | 27,833                          | 133                                  | 18,467                      | 5,468         |                                     | 3,765                          | 927,767                            | 3                   |
| Indiana.....              | 16,289                          | 71                                   | 8,109                       | 6,487         |                                     | 1,622                          | 407,080                            | 4                   |
| Iowa.....                 | 9,372                           | 59                                   | 3,375                       | 3,838         | 2,100                               |                                | 312,411                            | 3                   |
| Kansas.....               | 7,771                           | 179                                  | 5,779                       | 1,800         |                                     | 13                             | 257,727                            | 3                   |
| Kentucky.....             | 8,316                           | 48                                   | 8,268                       |               |                                     |                                | 166,293                            | 5                   |
| Louisiana.....            | 8,155                           | 62                                   | 2,361                       |               | 4,101                               | 1,631                          | 163,139                            | 5                   |
| Maine.....                | 4,127                           | 16                                   | 2,056                       | 2,055         |                                     |                                | 102,009                            | 4                   |
| Maryland.....             | 7,208                           | 17                                   | 5,385                       | 7             |                                     | 1,799                          | 180,194                            | 4                   |
| Massachusetts.....        | 16,377                          | 50                                   | 6,517                       | 2,074         | 314                                 | 7,422                          | 545,912                            | 3                   |
| Michigan.....             | 19,485                          | 110                                  | 2,303                       | 14,045        | 3,000                               | 27                             | 648,615                            | 3                   |
| Minnesota.....            | 10,214                          | 23                                   | 6,423                       | 3,800         |                                     | 189                            | 333,829                            | 3                   |
| Mississippi.....          | 6,101                           | 23                                   | 2,875                       | 2,573         | 495                                 | 135                            | 96,695                             | 6                   |
| Missouri.....             | 9,081                           | 56                                   | 9,025                       |               |                                     |                                | 454,057                            | 2                   |
| Montana.....              | 2,751                           | 32                                   | 2,650                       |               | 69                                  |                                | 55,026                             | 5                   |
| Nebraska.....             | 7,706                           | 56                                   | 5,096                       | 2,299         |                                     | 255                            | 192,656                            | 4                   |
| Nevada.....               | 696                             |                                      | 696                         |               |                                     |                                | 17,391                             | 4                   |
| New Hampshire.....        | 2,350                           |                                      | 1,762                       |               | 588                                 |                                | 58,746                             | 4                   |
| New Jersey.....           | 16,471                          | 53                                   | 2,438                       | 6,397         | 2,296                               | 5,287                          | 546,580                            | 3                   |
| New Mexico.....           | 2,282                           | 34                                   | 898                         |               | 1,350                               |                                | 45,310                             | 5                   |
| New York.....             | 43,393                          | 141                                  | 21,647                      | 5,761         |                                     | 15,844                         | 1,444,838                          | 3                   |
| North Carolina.....       | 14,773                          | 6                                    | 4,953                       | 2,931         | 6,540                               | 343                            | 246,100                            | 6                   |
| North Dakota.....         | 1,925                           | 25                                   | 1,267                       | 633           |                                     |                                | 64,132                             | 3                   |
| Ohio.....                 | 33,940                          | 153                                  | 15,427                      | 7,641         |                                     | 10,719                         | 838,020                            | 4                   |
| Oklahoma.....             | 10,079                          | 65                                   | 4,995                       | 2,419         |                                     | 2,600                          | 251,617                            | 4                   |
| Oregon.....               | 6,344                           | 21                                   | 4,604                       |               | 1,719                               |                                | 135,820                            | 5                   |
| Pennsylvania.....         | 31,060                          | 350                                  | 22,142                      | 5,111         | 3,457                               |                                | 1,024,637                          | 3                   |
| Rhode Island.....         | 1,885                           |                                      | 1,247                       |               | 302                                 | 336                            | 94,049                             | 2                   |
| South Carolina.....       | 6,679                           |                                      | 1,924                       | 1,113         | 3,642                               |                                | 111,322                            | 6                   |
| South Dakota.....         | 3,346                           | 41                                   | 1,900                       |               |                                     | 1,405                          | 78,382                             | 4                   |
| Tennessee.....            | 12,980                          | 155                                  | 3,481                       | 3,848         | 5,496                               |                                | 185,427                            | 7                   |
| Texas.....                | 28,479                          | 201                                  | 14,139                      |               | 7,070                               | 7,069                          | 711,984                            | 4                   |
| Utah.....                 | 2,190                           | 4                                    | 2,186                       |               |                                     |                                | 64,725                             | 4                   |
| Vermont.....              | 1,766                           |                                      | 1,321                       | 230           | 215                                 |                                | 44,154                             | 4                   |
| Virginia.....             | 11,082                          | 25                                   | 7,740                       | 3,317         |                                     |                                | 221,641                            | 5                   |
| Washington.....           | 10,863                          | 23                                   | 7,971                       | 2,000         |                                     | 869                            | 217,264                            | 5                   |
| West Virginia.....        | 4,928                           | 12                                   | 1,759                       |               | 3,157                               |                                | 122,992                            | 4                   |
| Wisconsin.....            | 15,169                          | 30                                   | 9,255                       | 3,992         | 1,284                               | 268                            | 379,236                            | 4                   |
| Wyoming.....              | 1,405                           |                                      | 829                         | 351           | 225                                 |                                | 35,135                             | 4                   |
| District of Columbia..... | 2,082                           |                                      |                             |               |                                     | 2,082                          | 104,117                            | 2                   |
| Total, 1933.....          | 519,403                         | 2,728                                | 277,517                     | 111,109       | 58,973                              | 69,076                         | 14,224,321                         | * 3.65              |
| Total:                    |                                 |                                      |                             |               |                                     |                                |                                    |                     |
| 1932.....                 | 514,139                         | 2,833                                | 301,788                     | 94,074        | 50,726                              | 64,718                         | 14,250,173                         | * 3.60              |
| 1931.....                 | 537,589                         | 2,117                                | 354,017                     | 100,074       | 42,488                              | 38,893                         | 15,407,650                         | * 3.48              |
| 1930.....                 | 494,683                         | 1,102                                | 333,927                     | 96,226        | 31,049                              | 27,379                         | 14,751,369                         | * 3.35              |
| 1929.....                 | 431,636                         | 778                                  | 297,968                     | 85,113        | 23,372                              | 24,405                         | 13,400,180                         | * 3.22              |
| 1928.....                 | 308,234                         | 686                                  | 211,046                     | 57,381        | 17,620                              | 18,492                         | 10,178,345                         | * 3.00              |
| 1927.....                 | 258,967                         | 500                                  | 182,096                     | 55,440        | 10,086                              | 10,845                         | 9,366,632                          | * 2.76              |
| 1926.....                 | 187,603                         | 239                                  | 129,442                     | 43,609        | 5,239                               | 9,074                          | 7,883,984                          | * 2.38              |
| 1925.....                 | 146,029                         | 217                                  | 98,605                      | 31,849        | 4,333                               | 11,025                         | 6,457,783                          | * 2.26              |

<sup>1</sup> These figures are not comparable to those shown on highway income table.<sup>2</sup> Includes city streets.<sup>3</sup> Includes \$13,334 to city streets.<sup>4</sup> Weighted average.

Bureau of Public Roads.

TABLE 525.—Current status of United States Public Works road construction, provided in title II, section 204 of the National Industrial Recovery Act, as of June 30, 1934<sup>1</sup>

| State          | Completed    |                    |                     | Under construction |                      |                             | Approved for construction    |              |                             |
|----------------|--------------|--------------------|---------------------|--------------------|----------------------|-----------------------------|------------------------------|--------------|-----------------------------|
|                | Total cost   | Public Works funds | Regular Federal aid | Mileage            | Estimated total cost | Public Works funds allotted | Regular Federal aid allotted | Mileage      | Public Works funds allotted |
|                | Dollars      | Dollars            | Dollars             | Miles              | Dollars              | Dollars                     | Dollars                      | Miles        | Dollars                     |
| Alabama        | 8,370,133    | 1,066,652.38       | 715,960.52          | 65.1               | 6,616,632.75         | 4,579,589.21                | 2,037,043.54                 | 370.0        | 1,808,471.75                |
| Arizona        | 6,211,060    | 2,004,484.71       | 127,436.95          | 141.4              | 3,330,332.74         | 2,746,710.97                | 445,578.84                   | 106.5        | 1,381,694.30                |
| Arkansas       | 6,748,835    | 609,101.26         | 127,436.95          | 32.4               | 4,782,855.25         | 4,336,045.66                | 445,578.84                   | 39.1         | 1,288,915.07                |
| California     | 16,607,354   | 5,650,013.18       | 4,628,869.81        | 172.3              | 12,089,450.99        | 9,875,918.67                | 27,436.05                    | 284.6        | 1,288,915.07                |
| Colorado       | 6,874,530    | 3,022,131.93       | 2,962,379.61        | 105.4              | 3,737,033.79         | 3,571,936.47                | 178,920.82                   | 7.0          | 230,989.02                  |
| Connecticut    | 2,895,740    | 80,124.44          | 80,124.44           | 8.8                | 2,866,635.29         | 2,711,818.59                | 27,436.05                    | 64.4         | 68,203.81                   |
| Delaware       | 1,810,088    | 274,915.09         | 266,277.02          | 73.3               | 1,083,829.70         | 1,083,829.70                | 613,090.19                   | 18.4         | 218,007.60                  |
| Florida        | 6,231,834    | 1,390,169.38       | 626,788.21          | 78.3               | 4,007,779.72         | 3,583,473.43                | 434,306.29                   | 131.7        | 84,703.00                   |
| Georgia        | 10,091,185   | 1,672,745.52       | 1,672,745.52        | 90.2               | 4,308,002.28         | 4,308,002.28                | 434,306.29                   | 200.1        | 1,045,825.20                |
| Idaho          | 4,456,249    | 1,066,092.03       | 1,066,092.03        | 167.4              | 2,703,637.80         | 2,715,549.72                | 178.1                        | 13.7         | 13,782.82                   |
| Illinois       | 17,570,770   | 540,630.64         | 540,630.64          | 46.6               | 13,621,077.74        | 13,621,077.74               | 377.6                        | 377.6        | 3,176,243.20                |
| Indiana        | 10,037,843   | 40,616.53          | 40,616.53           | 1.2                | 7,404,686.64         | 7,450,567.81                | 421.2                        | 421.2        | 2,077,512.89                |
| Iowa           | 1,055,000    | 1,055,000          | 1,055,000           | 147.3              | 7,207,057.25         | 6,716,960.00                | 356.4                        | 356.4        | 73,095.00                   |
| Kansas         | 2,403,085.86 | 2,398,545.41       | 2,398,545.41        | 242.2              | 8,030,154.63         | 7,046,070.45                | 341.7                        | 341.7        | 999,280.81                  |
| Kentucky       | 1,131,158.04 | 1,126,034.92       | 1,126,034.92        | 131.8              | 4,722,349.06         | 4,705,771.28                | 128.2                        | 128.2        | 899,890.20                  |
| Louisiana      | 6,828,591    | 625,710.21         | 625,710.21          | 18.6               | 4,453,210.00         | 3,946,559.60                | 85.3                         | 85.3         | 48,534.12                   |
| Maine          | 3,309,591    | 732,388.69         | 732,388.69          | 66.9               | 2,609,937.61         | 2,386,704.77                | 62.5                         | 62.5         | 724,106.90                  |
| Maryland       | 3,554,527    | 22,217.70          | 22,217.70           | 1.9                | 1,769,410.69         | 1,741,985.04                | 60.3                         | 60.3         | 250,293.28                  |
| Massachusetts  | 6,697,100    | 386,424.62         | 286,228.62          | 8.2                | 10,668,468.12        | 6,713,722.32                | 407.3                        | 407.3        | 1,198,741.00                |
| Michigan       | 12,736,227   | 364,350.00         | 364,350.00          | 11.4               | 6,068,825.00         | 10,647,675.00               | 469.7                        | 469.7        | 439,906.43                  |
| Minnesota      | 6,678,675    | 4,015,218.30       | 3,985,730.25        | 16.6               | 5,431,281.76         | 5,432,453.84                | 363.0                        | 363.0        | 1,024,641.35                |
| Mississippi    | 10,936,569   | 411,372.98         | 274,969.14          | 108.0              | 6,026,784.62         | 3,921,151.83                | 2,087,000.85                 | 542.0        | 631,233.65                  |
| Missouri       | 12,180,306   | 1,958,901.48       | 1,732,331.68        | 200.2              | 9,644,757.95         | 8,901,113.11                | 237,025.83                   | 370.6        | 237,025.83                  |
| Montana        | 7,439,748    | 2,484,917.43       | 2,484,917.43        | 297.8              | 5,246,316.95         | 4,886,690.15                | 122.3                        | 122.3        | 147,076.19                  |
| Nebraska       | 2,805,201.12 | 2,016,707.53       | 108,538.00          | 244.8              | 6,306,052.53         | 5,641,588.82                | 49.3                         | 49.3         | 42,274.05                   |
| Nevada         | 2,097,159.73 | 2,097,159.73       | 134,671.68          | 2.8                | 2,120,252.90         | 2,120,252.90                | 66.8                         | 66.8         | 104,946.89                  |
| New Hampshire  | 134,671.68   | 134,671.68         | 134,671.68          | 8.2                | 1,715,129.51         | 1,653,798.25                | 316.4                        | 316.4        | 128,714.77                  |
| New Jersey     | 6,340,839    | 160,151.25         | 160,151.25          | 285.7              | 5,659,697.65         | 5,450,643.04                | 376.5                        | 376.5        | 179,797.80                  |
| New Mexico     | 2,662,688.71 | 2,662,688.71       | 2,662,688.71        | 23.8               | 22,980,026.28        | 20,415,093.68               | 625.7                        | 625.7        | 859,624.03                  |
| New York       | 22,330,101   | 1,005,225.84       | 43,000.00           | 185.1              | 5,392,800.28         | 4,999,941.10                | 440.8                        | 440.8        | 1,619,983.77                |
| North Carolina | 9,522,293    | 2,315,265.85       | 822,943.66          | 486.6              | 5,145,185.02         | 1,919,321.79                | 343.8                        | 343.8        | 911,212.35                  |
| North Dakota   | 6,804,448    | 1,182,568.32       | 3,294.32            | 197.1              | 13,803,632.43        | 12,775,221.43               | 163.5                        | 163.5        | 408,609.78                  |
| Ohio           | 15,464,592   | 2,141,452.27       | 2,066,220.12        | 112.2              | 6,379,056.84         | 6,273,039.89                | 763.1                        | 763.1        | 1,338,626.91                |
| Oklahoma       | 1,401,881.34 | 1,486,920.12       | 98,444.47           | 150.4              | 6,379,056.84         | 3,276,360.18                | 57.8                         | 57.8         | 115,371.04                  |
| Oregon         | 2,488,491.83 | 2,302,168.96       | 2,302,168.96        | 61.3               | 15,803,939.07        | 1,988,559.28                | 1,988,559.28                 | 1,988,559.28 | 1,988,559.28                |
| Pennsylvania   | 18,891,004   | 1,275,142.80       | 1,275,142.80        | 2.3                | 1,688,559.28         | 1,688,559.28                | 1,688,559.28                 | 1,688,559.28 | 1,688,559.28                |
| Rhode Island   | 1,968,708    | 104,241.40         | 104,241.40          | 2.3                | 1,688,559.28         | 1,688,559.28                | 1,688,559.28                 | 1,688,559.28 | 1,688,559.28                |

|                           |             |               |               |         |                |                |              |          |               |         |
|---------------------------|-------------|---------------|---------------|---------|----------------|----------------|--------------|----------|---------------|---------|
| South Carolina.....       | 5,450,105   | 405,522.03    | 405,522.03    | 30.0    | 4,012,410.10   | 4,009,284.47   | 3,324.63     | 360.5    | 458,295.22    | 25.5    |
| South Dakota.....         | 6,011,470   | 1,433,846.17  | 1,433,846.17  | 206.2   | 2,057,477.42   | 2,040,083.40   | 307,793.82   | 412.5    | 834,642.10    | 204.0   |
| Tennessee.....            | 8,492,019   | 2,043,736.55  | 1,830,674.25  | 197.7   | 5,004,594.75   | 4,645,965.66   | 361,160.19   | 192.6    | 1,442,644.74  | 77.8    |
| Texas.....                | 24,244,024  | 8,173,921.56  | 6,893,617.91  | 1,007.7 | 14,040,506.00  | 13,324,462.13  | -----        | 873.7    | 1,057,647.40  | 37.7    |
| Utah.....                 | 4,194,708   | 2,976,936.17  | 2,637,603.60  | 207.2   | 1,922,833.30   | 1,920,874.14   | -----        | 102.9    | 1,137,171.70  | 6.3     |
| Vermont.....              | 1,867,573   | 132,315.96    | 131,118.06    | 148.3   | 1,747,613.74   | 1,670,608.19   | 5,938.06     | 85.4     | 43,745.83     | 1.1     |
| Virginia.....             | 7,410,767   | 2,022,430.89  | 1,972,211.64  | 148.0   | 4,500,588.02   | 4,193,116.07   | 119,558.30   | 202.0    | 896,111.73    | 20.8    |
| Washington.....           | 6,116,867   | 2,476,536.20  | 2,446,222.55  | 93.0    | 3,634,413.21   | 3,623,413.21   | -----        | 108.7    | 62,370.07     | 5.3     |
| West Virginia.....        | 4,474,234   | 820,707.27    | 820,707.27    | 9.3     | 3,654,123.66   | 3,623,777.62   | -----        | 131.1    | 340,106.66    | 12.1    |
| Wisconsin.....            | 6,724,681   | 2,567,133.44  | 2,316,177.28  | 122.3   | 6,757,323.51   | 6,576,480.78   | 64,908.74    | 304.8    | 470,466.51    | 21.1    |
| Wyoming.....              | 4,601,327   | 1,532,598.23  | 1,418,484.39  | 226.1   | 2,077,046.23   | 2,070,765.01   | 86,008.67    | 382.8    | 172,829.92    | 23.0    |
| District of Columbia..... | 1,915,469   | 497,696.88    | 497,696.88    | 5.0     | 1,431,648.68   | 1,414,694.98   | -----        | 7.5      | -----         | -----   |
| Hawaii.....               | 1,571,062   | 122,232.70    | 106,236.57    | 6.3     | 1,806,071.40   | 1,602,766.68   | 251,205.62   | 31.4     | 248,693.76    | 6.8     |
| Total.....                | 394,000,000 | 79,774,036.09 | 73,201,990.29 | 6,985.7 | 283,606,260.40 | 273,042,470.96 | 8,034,305.19 | 13,674.4 | 31,148,776.25 | 1,718.2 |

1 A table showing the current status of Federal-aid road construction has been published in previous Yearbooks but is omitted this year, since no Federal-aid authorization was made for the fiscal year ended June 30, 1934.

Bureau of Public Roads.



TABLE 526.—*Annual average wage rate per hour for common labor employed on Federal-aid highway projects, 1924-33 and on Public Works highway projects, 1933-34*FEDERAL-AID PROJECTS <sup>1</sup>

| Year      | New England  | Middle Atlantic | East North Central | West North Central | South Atlantic | East South Central | West South Central | Mountain     | Pacific      | United States |
|-----------|--------------|-----------------|--------------------|--------------------|----------------|--------------------|--------------------|--------------|--------------|---------------|
|           | <i>Cents</i> | <i>Cents</i>    | <i>Cents</i>       | <i>Cents</i>       | <i>Cents</i>   | <i>Cents</i>       | <i>Cents</i>       | <i>Cents</i> | <i>Cents</i> | <i>Cents</i>  |
| 1924..... | 49           | 49              | 40                 | 36                 | 28             | 24                 | 27                 | 40           | 53           | 38            |
| 1925..... | 46           | 49              | 37                 | 37                 | 27             | 25                 | 26                 | 44           | 52           | 38            |
| 1926..... | 49           | 47              | 35                 | 36                 | 29             | 25                 | 27                 | 44           | 52           | 38            |
| 1927..... | 49           | 47              | 39                 | 37                 | 28             | 25                 | 30                 | 45           | 53           | 40            |
| 1928..... | 49           | 43              | 39                 | 38                 | 26             | 26                 | 28                 | 46           | 52           | 41            |
| 1929..... | 51           | 43              | 39                 | 37                 | 28             | 26                 | 31                 | 47           | 53           | 39            |
| 1930..... | 50           | 42              | 38                 | 37                 | 25             | 24                 | 28                 | 47           | 53           | 39            |
| 1931..... | 45           | 37              | 36                 | 35                 | 22             | 20                 | 23                 | 45           | 51           | 36            |
| 1932..... | 35           | 36              | 36                 | 32                 | 19             | 19                 | 26                 | 44           | 48           | 32            |
| 1933..... | 35           | 34              | 38                 | 29                 | 21             | 19                 | 28                 | 47           | 48           | 32            |

PUBLIC WORKS PROJECTS <sup>2</sup>

|           |    |    |    |    |    |    |    |    |    |    |
|-----------|----|----|----|----|----|----|----|----|----|----|
| 1933..... | 40 | 40 | 47 | 45 | 31 | 30 | 35 | 55 | 56 | 44 |
| 1934..... | 43 | 41 | 50 | 44 | 31 | 30 | 35 | 55 | 57 | 42 |

<sup>1</sup> The volume of Federal-aid construction unaffected by the wage scales required on Public Works construction was so small in 1934 that average figures are not reported for that year.

<sup>2</sup> For these projects it is required that minimum wage rates, sufficient to provide (for the hours of labor as limited) a standard of living in decency and comfort, shall be fixed by State highway departments.

Bureau of Public Roads.

TABLE 527.—*Fertilizer materials: Sales and production of agricultural lime, phosphate rock, sulphur, and pyrites, in quantity and value, United States, 1931-33*

| Item  | Quantity          |                   |                   | Value          |                |                |
|---|-------------------|-------------------|-------------------|----------------|----------------|----------------|
|   | 1931              | 1932              | 1933              | 1931           | 1932           | 1933           |
| Agricultural lime and liming materials sold: <sup>1</sup> |                   |                   |                   |                |                |                |
| Lime from limestone:                                      | <i>Short tons</i> | <i>Short tons</i> | <i>Short tons</i> | <i>Dollars</i> | <i>Dollars</i> | <i>Dollars</i> |
| Quicklime.....  | 78,392            | 71,858            | 84,267            | 422,107        | 343,501        | 315,566        |
| Hydrated.....   | 218,920           | 172,716           | 161,843           | 1,502,042      | 1,023,270      | 1,002,681      |
| Lime from oyster shells <sup>2</sup> .....                | 11,207            | 10,626            | 3,814             | 85,884         | 44,688         | 22,948         |
| Limestone pulverized.....                                 | 1,421,050         | 910,430           | 994,540           | 2,117,141      | 1,230,542      | 1,239,724      |
| Calcareous marl.....                                      | 25,056            | 11,675            | 10,641            | 65,935         | 28,000         | 34,565         |
| Total.....  | 1,754,625         | 1,177,205         | 1,254,605         | 4,193,109      | 2,670,001      | 2,615,784      |
| Phosphate rock sold or used: <sup>4</sup>                 |                   |                   |                   |                |                |                |
| Sold for direct application to the soil.....              | <i>Long tons</i>  | <i>Long tons</i>  | <i>Long tons</i>  |                |                |                |
| Florida:  |                   |                   |                   |                |                |                |
| Hard rock.....  | 57,224            | 57,579            | 52,382            | 380,540        | 373,251        | 347,324        |
| Land pebble <sup>5</sup> .....                            | 2,004,242         | 1,412,397         | 2,083,741         | 8,821,546      | 4,406,361      | 6,069,786      |
| Tennessee:  |                   |                   |                   |                |                |                |
| Brown and blue rock.....                                  | 343,622           | 193,666           | 133,946           | 1,545,607      | 776,367        | 1,373,392      |
| Other States <sup>6</sup> .....                           | 129,871           | 43,262            | 20,243            | 540,792        | 182,514        | 81,860         |
| Total.....  | 2,534,959         | 1,706,904         | 2,490,312         | 9,288,485      | 5,738,493      | 7,872,362      |
| Sulphur produced.....                                     | 2,128,930         | 890,440           | 1,406,063         |                |                |                |
| Sulphur sold.....   | 1,376,826         | 1,108,852         | 1,637,368         | 24,800,000     | 20,000,000     | 29,800,000     |
| Pyrites produced.....                                     | 330,848           | 189,703           | 284,311           | 974,820        | 492,043        | 755,420        |

<sup>1</sup> Sold by producers. (Includes a small amount sold by Hawaii and Puerto Rico producers.)

<sup>2</sup> Partly estimated.

<sup>3</sup> Includes pulverized marble.

<sup>4</sup> Sold or used by producers.

<sup>5</sup> Includes soft rock.

<sup>6</sup> Includes a small quantity of tailings.

<sup>7</sup> Includes a small quantity of apatite from Virginia.

<sup>8</sup> Includes Idaho, Wyoming, and Montana in 1931; Idaho and Montana in 1932 and 1933.

<sup>9</sup> Approximate.

Bureau of Agricultural Economics; compiled from reports of the Bureau of Mines.

Figures for earlier years appear in previous issues of the Yearbook.

TABLE 528.—Fertilizers: Production and value, by States, 1931; United States, 1931 and 1933

| State                                  | Quantity             |                               |                                |                   | Value                |                               |                                |                |
|--|----------------------|-------------------------------|--------------------------------|-------------------|----------------------|-------------------------------|--------------------------------|----------------|
|  | Complete fertilizers | Super-phosphates <sup>1</sup> | Other fertilizers <sup>2</sup> | Total             | Complete fertilizers | Super-phosphates <sup>1</sup> | Other fertilizers <sup>2</sup> | Total          |
|  | <i>Short tons</i>    | <i>Short tons</i>             | <i>Short tons</i>              | <i>Short tons</i> | <i>Dollars</i>       | <i>Dollars</i>                | <i>Dollars</i>                 | <i>Dollars</i> |
| Maine.....                             | 87, 276              | ( <sup>3</sup> )              | ( <sup>3</sup> )               | 89, 443           | 3, 532, 284          | ( <sup>3</sup> )              | ( <sup>3</sup> )               | 3, 597, 949    |
| Massachusetts.....                     | 116, 254             | 40, 431                       | 5, 855                         | 162, 540          | 2, 855, 641          | 395, 200                      | 170, 075                       | 3, 420, 916    |
| Connecticut.....                       | 40, 872              | ( <sup>3</sup> )              | ( <sup>3</sup> )               | 44, 880           | 1, 567, 036          | ( <sup>3</sup> )              | ( <sup>3</sup> )               | 1, 791, 740    |
| New York.....                          | 83, 590              | ( <sup>3</sup> )              | ( <sup>3</sup> )               | 138, 838          | 2, 116, 992          | ( <sup>3</sup> )              | ( <sup>3</sup> )               | 2, 778, 995    |
| New Jersey.....                        | 179, 081             | ( <sup>3</sup> )              | ( <sup>3</sup> )               | 244, 821          | 4, 369, 774          | ( <sup>3</sup> )              | ( <sup>3</sup> )               | 5, 638, 445    |
| Pennsylvania.....                      | 116, 129             | 55, 656                       | 32, 290                        | 204, 075          | 2, 958, 174          | 501, 204                      | 725, 372                       | 4, 184, 750    |
| Ohio.....                              | 237, 932             | 105, 128                      | 39, 244                        | 382, 304          | 6, 462, 653          | 1, 472, 750                   | 865, 995                       | 8, 801, 439    |
| Indiana.....                           | 75, 733              | 13, 135                       | 16, 172                        | 105, 040          | 2, 008, 569          | 220, 693                      | 425, 544                       | 2, 654, 836    |
| Illinois.....                          | 140, 844             | 42, 783                       | 37, 293                        | 220, 920          | 4, 099, 956          | 661, 608                      | 847, 934                       | 5, 609, 495    |
| Maryland.....                          | 407, 154             | 539, 550                      | 25, 772                        | 972, 476          | 8, 912, 251          | 4, 501, 723                   | 443, 917                       | 13, 857, 891   |
| Virginia.....                          | 491, 085             | 94, 637                       | 62, 037                        | 648, 459          | 10, 454, 964         | 937, 333                      | 829, 655                       | 12, 241, 972   |
| North Carolina.....                    | 579, 405             | 169, 118                      | 19, 622                        | 768, 145          | 12, 385, 479         | 1, 700, 146                   | 435, 467                       | 14, 522, 092   |
| South Carolina.....                    | 294, 734             | 132, 334                      | 4, 218                         | 431, 286          | 6, 019, 949          | 1, 342, 815                   | 72, 551                        | 7, 435, 309    |
| Georgia.....                           | 635, 661             | 238, 845                      | 16, 294                        | 890, 800          | 13, 797, 457         | 2, 551, 395                   | 316, 503                       | 18, 665, 355   |
| Florida.....                           | 319, 432             | 101, 683                      | 12, 529                        | 433, 644          | 9, 413, 715          | 1, 131, 651                   | 377, 567                       | 10, 923, 233   |
| Tennessee.....                         | 107, 441             | 96, 394                       | 19, 272                        | 223, 107          | 2, 207, 532          | 1, 161, 517                   | 405, 461                       | 3, 774, 510    |
| Alabama.....                           | 223, 372             | 87, 744                       | 2, 189                         | 313, 305          | 4, 884, 865          | 944, 034                      | 37, 934                        | 5, 866, 836    |
| Mississippi.....                       | 76, 680              | ( <sup>3</sup> )              | ( <sup>3</sup> )               | 101, 270          | 2, 097, 410          | ( <sup>3</sup> )              | ( <sup>3</sup> )               | 2, 409, 225    |
| Arkansas.....                          | 20, 669              | ( <sup>3</sup> )              | ( <sup>3</sup> )               | 23, 751           | 601, 438             | ( <sup>3</sup> )              | ( <sup>3</sup> )               | 641, 806       |
| Louisiana.....                         | 90, 729              | 58, 751                       | 11, 346                        | 160, 826          | 2, 844, 141          | 642, 369                      | 274, 511                       | 3, 261, 041    |
| Texas.....                             | 33, 306              | ( <sup>3</sup> )              | ( <sup>3</sup> )               | 54, 286           | 973, 140             | ( <sup>3</sup> )              | ( <sup>3</sup> )               | 1, 319, 864    |
| California.....                        | 54, 463              | ( <sup>3</sup> )              | ( <sup>3</sup> )               | 105, 003          | 2, 379, 115          | ( <sup>3</sup> )              | ( <sup>3</sup> )               | 3, 943, 693    |
| Other States <sup>4</sup> .....        | 132, 208             | 74, 424                       | 41, 830                        | 248, 462          | 3, 728, 919          | 955, 374                      | 697, 216                       | 5, 381, 509    |
| Undistributed.....                     |                      | 117, 490                      | 108, 865                       |                   |                      | 1, 538, 047                   | 2, 941, 481                    |                |
| Total.....                             | 4, 544, 650          | 1, 968, 153                   | 454, 878                       | 6, 967, 681       | 110, 172, 501        | 20, 678, 216                  | 9, 867, 184                    | 140, 717, 901  |
| Total 1931 adjusted <sup>5</sup> ..... | 4, 461, 270          | 1, 963, 503                   | 389, 028                       | 6, 813, 801       | 107, 981, 716        | 20, 638, 816                  | 8, 538, 743                    | 137, 159, 275  |
| Total 1933 <sup>6</sup> .....          | 3, 273, 744          | 1, 545, 782                   | 376, 436                       | 5, 195, 962       | 61, 179, 993         | 12, 881, 737                  | 8, 749, 218                    | 82, 810, 953   |

<sup>1</sup> Includes concentrated phosphates; basis 16-percent available phosphoric acid.<sup>2</sup> Fish scrap, potash-superphosphate, bone meal and "other fertilizers."<sup>3</sup> Included in "undistributed", in order to avoid disclosing data for individual establishments.<sup>4</sup> States, which if shown separately, would disclose the operations of individual establishments. Certain States in this group, however, outranked some of the States shown separately.<sup>5</sup> Comparable with 1933 total.<sup>6</sup> Excludes data for the smaller manufacturers in the fertilizer industry and other establishments manufacturing fertilizer products.

Bureau of Agricultural Economics. Compiled from reports of the Bureau of the Census.

TABLE 529.—*Fertilizer: Consumption in the United States, by States, 1923-33*

| State and division                | Calendar year <sup>1</sup> |                        |                        |                        |                        |                        |                        |                        |                        |                        |                        |
|-----------------------------------|----------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|                                   | 1923                       | 1924                   | 1925                   | 1926                   | 1927                   | 1928                   | 1929                   | 1930                   | 1931                   | 1932                   | 1933 <sup>2</sup>      |
|                                   | 1,000<br>short<br>tons     | 1,000<br>short<br>tons | 1,000<br>short<br>tons | 1,000<br>short<br>tons | 1,000<br>short<br>tons | 1,000<br>short<br>tons | 1,000<br>short<br>tons | 1,000<br>short<br>tons | 1,000<br>short<br>tons | 1,000<br>short<br>tons | 1,000<br>short<br>tons |
| Maine.....                        | 168                        | 182                    | 185                    | 147                    | 184                    | 179                    | 186                    | 196                    | 195                    | 175                    | 149                    |
| New Hampshire <sup>3</sup> .....  | 17                         | 18                     | 16                     | 15                     | 17                     | 17                     | 12                     | 11                     | 11                     | 11                     | 10                     |
| Vermont.....                      | 18                         | 17                     | 18                     | 18                     | 16                     | 17                     | 15                     | 16                     | 15                     | 12                     | 10                     |
| Massachusetts.....                | 64                         | 62                     | 63                     | 59                     | 72                     | 71                     | 69                     | 67                     | 65                     | 62                     | 55                     |
| Rhode Island <sup>4</sup> .....   | 9                          | 9                      | 9                      | 8                      | 10                     | 10                     | 8                      | 8                      | 7                      | 7                      | 6                      |
| Connecticut.....                  | 70                         | 70                     | 70                     | 70                     | 65                     | 72                     | 69                     | 69                     | 70                     | 50                     | 47                     |
| New York.....                     | 250                        | 250                    | 253                    | 234                    | 260                    | 260                    | 288                    | 288                    | 260                    | 235                    | 212                    |
| New Jersey.....                   | 157                        | 153                    | 147                    | 135                    | 142                    | 144                    | 162                    | 156                    | 151                    | 138                    | 128                    |
| Pennsylvania.....                 | 309                        | 320                    | 328                    | 329                    | 327                    | 340                    | 348                    | 334                    | 287                    | 235                    | 212                    |
| North Atlantic.....               | 1,062                      | 1,079                  | 1,089                  | 1,015                  | 1,093                  | 1,110                  | 1,157                  | 1,145                  | 1,061                  | 925                    | 829                    |
| Ohio.....                         | 303                        | 321                    | 322                    | 305                    | 313                    | 321                    | 339                    | 327                    | 249                    | 169                    | 209                    |
| Indiana <sup>5</sup> .....        | 198                        | 192                    | 226                    | 228                    | 240                    | 221                    | 250                    | 224                    | 166                    | 80                     | 98                     |
| Illinois.....                     | 17                         | 17                     | 25                     | 25                     | 26                     | 31                     | 38                     | 41                     | 32                     | 16                     | 17                     |
| Michigan.....                     | 84                         | 95                     | 109                    | 105                    | 117                    | 150                    | 153                    | 145                    | 105                    | 83                     | 74                     |
| Wisconsin.....                    | 15                         | 15                     | 12                     | 16                     | 23                     | 33                     | 41                     | 51                     | 46                     | 27                     | 16                     |
| Minnesota.....                    | 47                         | 48                     | 49                     | 11                     | 11                     | 14                     | 16                     | 16                     | 18                     | 9                      | 7                      |
| Iowa.....                         | 44                         | 45                     | 38                     | 76                     | 77                     | 10                     | 21                     | 25                     | 22                     | 10                     | 45                     |
| Missouri <sup>6</sup> .....       | 52                         | 47                     | 64                     | 57                     | 56                     | 65                     | 59                     | 60                     | 49                     | 26                     | 32                     |
| Kansas.....                       | 45                         | 45                     | 34                     | 8                      | 8                      | 9                      | 10                     | 6                      | 6                      | 3                      | 2                      |
| Other States.....                 | 1                          | 1                      | 1                      | 1                      | 1                      | 1                      | 2                      | 3                      | 2                      | 1                      | 2                      |
| North Central.....                | 686                        | 706                    | 778                    | 762                    | 802                    | 855                    | 929                    | 898                    | 692                    | 424                    | 462                    |
| Delaware.....                     | 37                         | 36                     | 41                     | 43                     | 41                     | 41                     | 43                     | 43                     | 36                     | 33                     | 28                     |
| Maryland.....                     | 155                        | 151                    | 165                    | 163                    | 173                    | 165                    | 180                    | 177                    | 146                    | 125                    | 133                    |
| Virginia <sup>6</sup> .....       | 422                        | 442                    | 452                    | 435                    | 408                    | 438                    | 430                    | 449                    | 379                    | 280                    | 308                    |
| West Virginia <sup>4</sup> .....  | 40                         | 40                     | 41                     | 43                     | 44                     | 50                     | 46                     | 45                     | 40                     | 35                     | 32                     |
| North Carolina <sup>4</sup> ..... | 1,066                      | 1,188                  | 1,218                  | 1,218                  | 1,171                  | 1,349                  | 1,294                  | 1,242                  | 1,003                  | 696                    | 889                    |
| South Carolina <sup>4</sup> ..... | 693                        | 844                    | 873                    | 840                    | 727                    | 788                    | 760                    | 749                    | 599                    | 446                    | 582                    |
| Georgia <sup>6</sup> .....        | 676                        | 679                    | 779                    | 780                    | 713                    | 883                    | 869                    | 929                    | 686                    | 357                    | 416                    |
| Florida <sup>6</sup> .....        | 398                        | 365                    | 359                    | 399                    | 417                    | 469                    | 427                    | 489                    | 419                    | 381                    | 353                    |
| South Atlantic.....               | 3,487                      | 3,740                  | 3,928                  | 3,921                  | 3,686                  | 4,191                  | 4,094                  | 4,123                  | 3,308                  | 2,353                  | 2,741                  |
| Kentucky.....                     | 90                         | 85                     | 93                     | 92                     | 70                     | 90                     | 93                     | 114                    | 105                    | 55                     | 58                     |
| Tennessee <sup>6</sup> .....      | 106                        | 115                    | 142                    | 156                    | 112                    | 151                    | 143                    | 164                    | 119                    | 63                     | 77                     |
| Alabama.....                      | 448                        | 457                    | 598                    | 615                    | 478                    | 681                    | 675                    | 644                    | 420                    | 205                    | 287                    |
| Mississippi <sup>6</sup> .....    | 208                        | 206                    | 253                    | 278                    | 219                    | 333                    | 328                    | 404                    | 197                    | 85                     | 104                    |
| Arkansas <sup>6</sup> .....       | 80                         | 97                     | 128                    | 126                    | 75                     | 126                    | 157                    | 158                    | 62                     | 17                     | 22                     |
| Louisiana <sup>6</sup> .....      | 105                        | 125                    | 111                    | 114                    | 93                     | 144                    | 174                    | 176                    | 94                     | 49                     | 61                     |
| Oklahoma.....                     | 44                         | 44                     | 35                     | 36                     | 34                     | 38                     | 69                     | 67                     | 67                     | 63                     | 62                     |
| Texas <sup>6</sup> .....          | 79                         | 128                    | 101                    | 125                    | 81                     | 145                    | 192                    | 145                    | 65                     | 34                     | 34                     |
| South Central.....                | 1,120                      | 1,217                  | 1,431                  | 1,512                  | 1,132                  | 1,678                  | 1,771                  | 1,812                  | 1,069                  | 511                    | 645                    |
| Washington.....                   | 35                         | 37                     | 40                     | 12                     | 14                     | 16                     | 21                     | 22                     | 18                     | 9                      | 8                      |
| Oregon.....                       | 48                         | 48                     | 48                     | 48                     | 49                     | 10                     | 12                     | 12                     | 11                     | 10                     | 10                     |
| California.....                   | 72                         | 66                     | 86                     | 94                     | 103                    | 121                    | 130                    | 142                    | 132                    | 127                    | 113                    |
| Other States.....                 | 2                          | 2                      | 3                      | 4                      | 4                      | 4                      | 10                     | 10                     | 15                     | 10                     | 5                      |
| Western.....                      | 87                         | 83                     | 107                    | 118                    | 130                    | 151                    | 173                    | 186                    | 176                    | 156                    | 136                    |
| United States.....                | 6,442                      | 6,825                  | 7,333                  | 7,323                  | 6,843                  | 7,985                  | 8,079                  | 8,164                  | 6,306                  | 4,369                  | 4,813                  |

<sup>1</sup> Except as follows: New Hampshire, Massachusetts, Idaho, and Oklahoma (1922-28), year ended June 30; Rhode Island, year ended Mar. 31; New Jersey, year ended Oct. 31.

<sup>2</sup> Preliminary.

<sup>3</sup> Estimated by State authorities.

<sup>4</sup> Estimated.

<sup>5</sup> Agricultural census.

<sup>6</sup> Based on tag sales.

<sup>7</sup> Total of 4 companies plus estimates for others.

Bureau of Agricultural Economics; compiled from reports of the National Fertilizer Association, published in the Fertilizer Review; based on fertilizer tag sales or sale records, or estimates, as shown in footnotes.

TABLE 530.—*Fertilizer and fertilizer materials: Production, sales, imports, exports, and consumption, United States, 1929-33*

| Item   | 1929              | 1930              | 1931              | 1932              | 1933 <sup>1</sup> |
|--|-------------------|-------------------|-------------------|-------------------|-------------------|
| Sulphate of ammonia (equivalent of all forms): | <i>Short tons</i> | <i>Short tons</i> | <i>Short tons</i> | <i>Short tons</i> | <i>Short tons</i> |
| Production <sup>2,3</sup> .....                | 856, 214          | 769, 022          | 569, 966          | 356, 108          | 420, 293          |
| Sales <sup>2,3</sup> .....                     | 827, 674          | 746, 031          | 578, 475          | 372, 243          | 411, 920          |
| Imports for consumption.....                   | 21, 338           | 39, 160           | 127, 999          | 344, 188          | 393, 405          |
| Exports.....                                   | 162, 132          | 91, 461           | 74, 930           | 16, 511           | 15, 968           |
| Nitrate of soda, imports for consumption.....  | 1, 042, 113       | 643, 881          | 616, 687          | 56, 482           | 137, 610          |
| Sulphuric acid:                                |                   |                   |                   |                   |                   |
| Production.....                                | 2, 262, 784       | 2, 228, 588       | 1, 427, 923       | 952, 581          | 1, 366, 973       |
| Imports for consumption.....                   | 8, 104            | 459               | 1, 172            | 749               | 1, 024            |
| Exports.....                                   | 3, 480            | 2, 735            | 1, 601            | 1, 516            | -----             |
| Consumption <sup>4</sup> .....                 | 2, 446, 581       | 2, 476, 712       | 1, 351, 551       | 770, 592          | 1, 206, 117       |
| Superphosphate:                                |                   |                   |                   |                   |                   |
| Production <sup>4</sup> .....                  | 4, 342, 012       | 4, 595, 096       | 2, 744, 528       | 1, 765, 971       | 2, 694, 870       |
| Sales <sup>4,5</sup> .....                     | 1, 430, 700       | 1, 455, 259       | 1, 030, 665       | 709, 074          | 824, 176          |
| Exports.....                                   | 95, 332           | 125, 058          | 91, 377           | 26, 749           | 39, 616           |
| Potash:  |                   |                   |                   |                   |                   |
| Production.....                                | 107, 820          | 105, 810          | 133, 920          | 143, 120          | 339, 110          |
| Sales.....                                     | 101, 370          | 98, 280           | 133, 430          | 121, 390          | 328, 481          |
| Exports.....                                   | 15, 532           | 17, 042           | 32, 460           | 2, 034            | 28, 086           |
| Imports (general), <sup>6</sup> from—          |                   |                   |                   |                   |                   |
| Spain.....                                     | 21, 506           | 25, 811           | 29, 897           | 17, 725           | 66, 564           |
| Germany.....                                   | 543, 072          | 567, 382          | 306, 028          | 187, 657          | 221, 562          |
| Netherlands <sup>7</sup> .....                 | 12, 804           | 29, 420           | 133, 577          | 42, 691           | 100, 920          |
| France.....                                    | -----             | -----             | 3, 720            | 5, 364            | 6, 116            |
| Belgium <sup>8</sup> .....                     | 292, 482          | 309, 417          | 54, 116           | 28, 866           | 22, 120           |
| Other countries.....                           | 543               | 1, 295            | 1, 455            | 5, 235            | 8, 288            |
| Total.....                                     | 870, 502          | 933, 325          | 528, 793          | 287, 538          | 425, 570          |
| Imports for consumption:                       |                   |                   |                   |                   |                   |
| Kainit.....                                    | 85, 042           | 125, 455          | 61, 750           | 55, 299           | 114, 228          |
| Manure salts.....                              | 437, 727          | 405, 215          | 200, 800          | 113, 038          | 126, 696          |
| Muriate of potash.....                         | 258, 682          | 306, 047          | 202, 204          | 87, 761           | 118, 203          |
| Sulphate of potash.....                        | 89, 051           | 96, 808           | 63, 663           | 31, 440           | 66, 444           |
| Other potash-bearing substances.....           | 706               | 613               | 547               | 393               | 503               |
| Total.....                                     | 871, 208          | 933, 938          | 528, 764          | 287, 931          | 426, 074          |

<sup>1</sup> Preliminary.<sup>2</sup> Byproduct of coke ovens; production from other sources (coal, gas, bone carbonizing, etc.) is usual as than 5 percent of the total production.<sup>3</sup> Includes ammonia liquor  $\text{NH}_3$  content converted to sulphate equivalent.<sup>4</sup> Fertilizer establishments only.<sup>5</sup> Bulk superphosphate. Superphosphate in base and mixed goods excluded.<sup>6</sup> Includes kainit, manure salts, sulphate of and muriate of potash.<sup>7</sup> Originated mostly in Germany.<sup>8</sup> Originated mostly in France.

Bureau of Agricultural Economics; compiled as follows: Production and sales, sulphate of ammonia and potash from Bureau of Mines; sulphuric acid and superphosphate from Bureau of the Census; imports and exports from Bureau of Foreign and Domestic Commerce.

TABLE 531.—*Nitrogen: World production of, contained in inorganic nitrogeneous materials, 1929-34*

| Product                                     | Quantity produced during year ended June 30 |                            |                            |                            |                            |                            |
|---|---|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
|   | 1929  | 1930                       | 1931                       | 1932                       | 1933                       | 1934                       |
| Byproduct sulphate of ammonia.....          | <i>Short tons</i> 413, 600                  | <i>Short tons</i> 466, 900 | <i>Short tons</i> 395, 600 | <i>Short tons</i> 331, 800 | <i>Short tons</i> 283, 500 | <i>Short tons</i> 336, 500 |
| Other byproduct ammonia <sup>1</sup> .....  | 56, 100                                     | 56, 500                    | 34, 000                    | 33, 000                    | 43, 500                    | 49, 500                    |
| Cyanamide.....                              | 211, 200                                    | 290, 200                   | 221, 000                   | 148, 100                   | 185, 300                   | 211, 700                   |
| Synthetic sulphate of ammonia.....          | 533, 500                                    | 486, 300                   | 384, 000                   | 574, 400                   | 616, 000                   | 594, 300                   |
| Nitrate of lime.....                        | 149, 600                                    | 143, 500                   | 121, 600                   | 86, 800                    | 130, 100                   | 116, 600                   |
| Other synthetic nitrogen <sup>1</sup> ..... | 421, 300                                    | 470, 000                   | 432, 500                   | 382, 600                   | 508, 300                   | 563, 100                   |
| Chilean nitrate of soda.....                | 539, 000                                    | 510, 400                   | 275, 000                   | 187, 000                   | 77, 900                    | 93, 700                    |
| Total.....                                  | 2, 324, 300                                 | 2, 423, 800                | 1, 863, 700                | 1, 743, 700                | 1, 844, 600                | 1, 965, 400                |

<sup>1</sup> Including ammonia products used for industrial purposes and ammonia in mixed fertilizers.

Bureau of Chemistry and Soils. British Sulphate of Ammonia Federation (Ltd.), annual report.

Fertilizers are included in this table under the final form as sold, so that, for example, cyanamide if converted into sulphate of ammonia is included under synthetic sulphate of ammonia, or, if into ammophos, is included under other synthetic nitrogen.

TABLE 532.—*Insecticides and fungicides: Production, sales, imports for consumption and domestic exports, 1928-33*

| Item  | 1928          | 1929          | 1930          | 1931          | 1932          | 1933          |
|---|---------------|---------------|---------------|---------------|---------------|---------------|
| <b>Arsenic, white:</b>                        | <i>Pounds</i> | <i>Pounds</i> | <i>Pounds</i> | <i>Pounds</i> | <i>Pounds</i> | <i>Pounds</i> |
| Production <sup>1</sup> -----                 | 28,362,000    | 33,210,000    | 34,114,000    | 34,274,000    | 25,408,000    | 21,300,000    |
| Sales <sup>2</sup> -----                      |               |               |               |               |               |               |
| Refined-----                                  | 16,230,000    | 19,646,000    | 29,308,000    | 23,964,000    | 21,016,000    | 17,536,000    |
| Crude-----                                    | 7,804,000     | 9,446,000     | 5,542,000     | 3,590,000     | 3,950,000     | 6,058,000     |
| Imports for consumption--                     | 22,305,972    | 26,314,042    | 20,942,663    | 15,581,398    | 13,764,683    | 21,116,720    |
| Calcium arsenate:                             |               |               |               |               |               |               |
| Production-----                               |               | 33,064,426    |               | 26,128,620    |               |               |
| Imports for consumption--                     | 1,323         |               | 6,359         | 40,950        | 4,500         | 11,023        |
| Exports-----                                  | 1,178,702     | 3,139,633     | 3,177,335     | 2,145,653     | 2,533,599     | 2,585,824     |
| Lead arsenate:                                |               |               |               |               |               |               |
| Production-----                               |               | 30,682,379    |               | 37,974,038    |               |               |
| Imports for consumption--                     |               | 200           | 800           |               |               | 1,000         |
| Exports-----                                  | 1,093,673     | 1,563,982     | 2,270,980     | 1,788,345     | 1,189,629     | 598,699       |
| Sulphate of copper:                           |               |               |               |               |               |               |
| Production <sup>3</sup> -----                 | 44,463,000    | 40,258,860    | 36,976,403    | 35,265,409    | 24,908,525    | 25,436,881    |
| Imports for consumption--                     | 3,611,844     | 5,388,743     | 5,964,378     | 2,643,741     | 3,234,058     | 46,969        |
| Exports-----                                  | 8,666,899     | 6,419,688     | 5,061,554     | 7,190,919     | 4,132,529     | 2,749,299     |
| Tobacco extracts, exports <sup>4</sup> -----  | 2,386,526     | 2,294,567     | 1,929,171     | 1,542,811     | 1,315,947     | 1,447,215     |
| Sodium arsenate: Imports for consumption----- | 12,403        | 133,539       | 94,051        | 9,284         | 5,763         | 4,974         |
| Prepared animal dips:                         |               |               |               |               |               |               |
| Imports for consumption <sup>5</sup> -----    | 175,055       | 208,770       | 174,215       | 154,530       | 62,509        | 106,751       |
| Exports-----                                  |               | 2,252,644     | 1,258,139     |               |               |               |

<sup>1</sup> Byproduct from the mining of copper, lead, and iron ores. (Bureau of Mines.) The production for sale in the "Miscellaneous Chemical Industry," as reported by the Census, was 34,352,500 pounds in 1931 and 21,152,574 pounds in 1933, with some plants not reporting.

<sup>2</sup> Sales by producers. (Bureau of Mines.)

<sup>3</sup> Copper industry only. (Bureau of Mines.) The production for sale in the "Miscellaneous Chemical Industry," as reported by the Census, was 60,816,515 pounds in 1931 and 55,949,580 pounds in 1933.

<sup>4</sup> Nicotine sulphate and "other tobacco extracts."

<sup>5</sup> Classified as sheep dip.

Bureau of Agricultural Economics; production and sales from Bureau of the Census and Bureau of Mines (indicated by footnote); imports and exports from the Bureau of Foreign and Domestic Commerce.

TABLE 533.—*Insecticides and fungicides: Average wholesale price per pound at New York, 1924-34* <sup>1</sup>

| Calendar year | Arsenic white | Calcium arsenate | Lead arsenate |              | Paris green  | Bordeaux mixture |              | Lime-sulphur solution, per gallon |
|---------------|---------------|------------------|---------------|--------------|--------------|------------------|--------------|-----------------------------------|
|               |               |                  | Powder        | Paste        |              | Powder           | Paste        |                                   |
|               | <i>Cents</i>  | <i>Cents</i>     | <i>Cents</i>  | <i>Cents</i> | <i>Cents</i> | <i>Cents</i>     | <i>Cents</i> | <i>Cents</i>                      |
| 1924-----     | 9.4           | 10.6             | 20.9          | 13.1         | 28.8         | 16.3             | 12.5         | 16.5                              |
| 1925-----     | 5.1           | 7.8              | 15.6          | 11.0         | 21.5         | 13.2             | 11.0         | 16.5                              |
| 1926-----     | 3.8           | 8.0              | 14.6          | 11.0         | 18.4         | 11.5             | 11.0         | 14.7                              |
| 1927-----     | 4.0           | 7.5              | 13.8          | -----        | 19.2         | 11.5             | 11.0         | 15.5                              |
| 1928-----     | 4.4           | 6.8              | 14.1          | -----        | 27.0         | 11.3             | 10.9         | 15.5                              |
| 1929-----     | 4.5           | 7.4              | 13.5          | -----        | 30.9         | 11.3             | 10.7         | 15.2                              |
| 1930-----     | 4.5           | 8.1              | 14.5          | -----        | 35.2         | 13.0             | 13.0         | 15.2                              |
| 1931-----     | 4.5           | 6.5              | 12.6          | -----        | 32.5         | 12.8             | 12.8         | 15.2                              |
| 1932-----     | 4.5           | 6.0              | 11.6          | -----        | 30.1         | 12.8             | 12.8         | 16.3                              |
| 1933-----     | 4.4           | 6.8              | 10.4          | -----        | 29.7         | 11.0             | 11.0         | 17.0                              |
| 1934-----     | 4.2           | 7.8              | 10.8          | -----        | 29.5         | 12.6             | 12.6         | 15.1                              |

<sup>1</sup> Average of monthly range.

Bureau of Agricultural Economics; compiled from the Oil, Paint, and Drug Reporter.

TABLE 534.—*Number of farmers' selling and buying associations, estimated membership, and estimated business, with percentages for geographic divisions, leading States, and commodity groups, 1933-34*

| Geographic division, State, and commodity group | Associations listed, 1934 <sup>1</sup> |              | Membership, 1934 <sup>2</sup> |              | Estimated business, 1933-34 season |              |
|---|--|--------------|-------------------------------|--------------|------------------------------------|--------------|
|   | Number                                 | Percent      | Number                        | Percent      | 1,000 dollars                      | Percent      |
| <b>Geographic division:</b>                     |  |              |                               |              |                                    |              |
| West North Central.....                         | 4,794                                  | 44.0         | 1,137,700                     | 36.1         | 369,120                            | 27.0         |
| East North Central.....                         | 2,891                                  | 26.5         | 868,520                       | 27.5         | 304,990                            | 22.3         |
| Pacific.....                                    | 812                                    | 7.5          | 181,950                       | 5.8          | 227,431                            | 16.7         |
| Middle Atlantic.....                            | 458                                    | 4.2          | 206,350                       | 6.5          | 152,360                            | 11.2         |
| West South Central.....                         | 530                                    | 4.8          | 194,810                       | 6.2          | 90,157                             | 6.6          |
| Mountain.....                                   | 482                                    | 4.4          | 133,610                       | 4.2          | 58,331                             | 4.3          |
| South Atlantic.....                             | 425                                    | 3.9          | 139,440                       | 4.4          | 57,937                             | 4.2          |
| East South Central.....                         | 256                                    | 2.3          | 133,580                       | 5.8          | 49,780                             | 3.7          |
| New England.....                                | 202                                    | 1.9          | 102,840                       | 3.5          | 54,870                             | 4.0          |
| <b>Total.....</b>                               | <b>10,900</b>                          | <b>100.0</b> | <b>3,156,000</b>              | <b>100.0</b> | <b>1,365,000</b>                   | <b>100.0</b> |
| <b>State:</b>                                   |  |              |                               |              |                                    |              |
| Minnesota.....                                  | 1,458                                  | 13.4         | 335,450                       | 10.6         | 109,840                            | 8.1          |
| Illinois.....                                   | 786                                    | 7.2          | 271,900                       | 8.6          | 123,150                            | 9.0          |
| Iowa.....                                       | 1,010                                  | 9.3          | 239,940                       | 7.6          | 85,270                             | 6.2          |
| Wisconsin.....                                  | 1,140                                  | 10.5         | 183,960                       | 5.8          | 62,460                             | 4.6          |
| California.....                                 | 447                                    | 4.1          | 85,440                        | 2.7          | 162,994                            | 11.9         |
| New York.....                                   | 236                                    | 2.2          | 129,250                       | 4.1          | 110,390                            | 8.1          |
| Missouri.....                                   | 508                                    | 4.7          | 166,500                       | 5.3          | 52,870                             | 3.9          |
| Nebraska.....                                   | 529                                    | 4.8          | 165,210                       | 5.2          | 45,160                             | 3.3          |
| Ohio.....                                       | 333                                    | 3.0          | 140,290                       | 4.5          | 51,910                             | 3.8          |
| Michigan.....                                   | 356                                    | 3.3          | 136,900                       | 4.3          | 34,270                             | 2.5          |
| Indiana.....                                    | 276                                    | 2.5          | 135,570                       | 4.3          | 33,200                             | 2.4          |
| North Dakota.....                               | 505                                    | 4.6          | 73,250                        | 2.3          | 27,540                             | 2.0          |
| All others.....                                 | 3,316                                  | 30.4         | 1,092,340                     | 34.7         | 465,946                            | 34.2         |
| <b>Total.....</b>                               | <b>10,900</b>                          | <b>100.0</b> | <b>3,156,000</b>              | <b>100.0</b> | <b>1,365,000</b>                   | <b>100.0</b> |
| <b>Commodity group:</b>                         |  |              |                               |              |                                    |              |
| Dairy products.....                             | 2,286                                  | 21.0         | 757,000                       | 24.0         | 380,000                            | 27.9         |
| Grain <sup>3</sup> .....                        | 3,178                                  | 29.2         | 600,000                       | 19.0         | 285,000                            | 20.9         |
| Livestock.....                                  | 1,371                                  | 12.6         | 410,000                       | 13.0         | 162,000                            | 11.9         |
| Fruits and vegetables.....                      | 1,194                                  | 10.9         | 185,000                       | 5.9          | 182,000                            | 13.3         |
| Cotton and products.....                        | 250                                    | 2.3          | 200,000                       | 6.3          | 100,000                            | 7.3          |
| Poultry and products.....                       | 147                                    | 1.3          | 73,000                        | 2.3          | 48,000                             | 3.5          |
| Wool and mohair.....                            | 120                                    | 1.1          | 63,800                        | 2.0          | 13,700                             | 1.0          |
| Tobacco.....                                    | 16                                     | .1           | 46,600                        | 1.5          | 5,500                              | .4           |
| Nuts.....                                       | 57                                     | .5           | 15,000                        | .5           | 11,500                             | .9           |
| Forage crops.....                               | 32                                     | .3           | 7,600                         | .2           | 1,800                              | .1           |
| Miscellaneous selling.....                      | 401                                    | 3.7          | 106,000                       | 3.4          | 23,500                             | 1.7          |
| Miscellaneous buying.....                       | 1,848                                  | 17.0         | 692,000                       | 21.9         | 152,000                            | 11.1         |
| <b>Total.....</b>                               | <b>10,900</b>                          | <b>100.0</b> | <b>3,156,000</b>              | <b>100.0</b> | <b>1,365,000</b>                   | <b>100.0</b> |

<sup>1</sup> Including independent local associations, federations, large-scale centralized associations, sales agencies, and independent service-rendering associations, but not including subsidiaries nor associations only renting unsold property.

<sup>2</sup> Includes members, contract members, shareholders, shippers, consignors, and patrons.

<sup>3</sup> Including dry beans and rice.

Farm Credit Administration.

TABLE 535.—*Farmers' selling and buying associations, estimated membership, and estimated business, by commodity groups, 1927-28 and 1929-30 to 1933-34*

| Commodity group                   | Associations listed <sup>1</sup> |         |         |         |         |         | Estimated membership <sup>2</sup> |           |           |           |           |           | Estimated business |               |               |               |               |               |
|-----------------------------------|----------------------------------|---------|---------|---------|---------|---------|-----------------------------------|-----------|-----------|-----------|-----------|-----------|--------------------|---------------|---------------|---------------|---------------|---------------|
|                                   | 1928                             | 1930    | 1931    | 1932    | 1933    | 1934    | 1928                              | 1930      | 1931      | 1932      | 1933      | 1934      | 1927-28            | 1929-30       | 1930-31       | 1931-32       | 1932-33       | 1933-34       |
|                                   | Num-ber                          | Num-ber | Num-ber | Num-ber | Num-ber | Num-ber | Num-ber                           | Num-ber   | Num-ber   | Num-ber   | Num-ber   | Num-ber   | 1,000 dollars      | 1,000 dollars | 1,000 dollars | 1,000 dollars | 1,000 dollars | 1,000 dollars |
| Cotton and cotton products.....   | 125                              | 199     | 201     | 267     | 274     | 250     | 140,000                           | 150,000   | 190,000   | 240,000   | 293,000   | 200,000   | 97,000             | 110,000       | 130,000       | 69,000        | 42,000        | 100,000       |
| Dairy products.....               | 2,479                            | 2,458   | 2,391   | 2,392   | 2,293   | 2,286   | 600,000                           | 650,000   | 725,000   | 740,000   | 724,000   | 757,000   | 620,000            | 680,000       | 620,000       | 520,000       | 390,000       | 390,000       |
| Forage crops.....                 | 15                               | 11      | 8       | 31      | 33      | 32      | 2,000                             | 1,000     | 1,000     | 7,500     | 7,800     | 7,600     | 1,400              | 1,200         | 1,200         | 1,750         | 1,500         | 1,800         |
| Fruits and vegetables.....        | 1,209                            | 1,384   | 1,380   | 1,347   | 1,268   | 1,194   | 215,000                           | 218,000   | 182,000   | 180,000   | 170,000   | 185,000   | 300,000            | 320,000       | 319,000       | 283,000       | 200,000       | 182,000       |
| Grain <sup>3</sup> .....          | 3,455                            | 3,448   | 2,448   | 3,500   | 3,131   | 3,178   | 900,000                           | 810,000   | 775,000   | 705,000   | 600,000   | 600,000   | 680,000            | 690,000       | 621,000       | 450,000       | 280,000       | 285,000       |
| Livestock.....                    | 2,012                            | 2,153   | 2,014   | 1,855   | 1,575   | 1,371   | 450,000                           | 465,000   | 400,000   | 450,000   | 440,000   | 410,000   | 320,000            | 320,000       | 300,000       | 290,000       | 182,000       | 162,000       |
| Nuts.....                         | 40                               | 44      | 71      | 70      | 65      | 57      | 15,000                            | 14,000    | 17,000    | 18,000    | 17,500    | 15,000    | 14,000             | 14,600        | 13,000        | 8,000         | 8,500         | 11,500        |
| Poultry and poultry products..... | 90                               | 157     | 160     | 172     | 154     | 147     | 50,000                            | 67,000    | 82,000    | 88,000    | 78,000    | 73,000    | 40,000             | 79,400        | 86,000        | 72,000        | 53,000        | 48,000        |
| Tobacco.....                      | 16                               | 15      | 13      | 21      | 20      | 16      | 15,000                            | 75,000    | 40,000    | 54,000    | 60,000    | 46,000    | 22,000             | 6,800         | 7,000         | 10,000        | 6,500         | 5,500         |
| Wool and mohair.....              | 99                               | 131     | 126     | 134     | 115     | 120     | 25,000                            | 40,000    | 64,000    | 62,000    | 63,800    | 7,000     | 10,800             | 10,800        | 26,000        | 21,000        | 9,000         | 13,700        |
| Miscellaneous selling.....        | 595                              | 546     | 474     | 436     | 424     | 401     | 190,000                           | 140,000   | 132,000   | 122,500   | 98,000    | 106,000   | 70,000             | 77,200        | 61,800        | 48,650        | 27,000        | 23,500        |
| Miscellaneous buying.....         | 1,205                            | 1,454   | 1,588   | 1,645   | 1,648   | 1,848   | 398,000                           | 470,000   | 392,000   | 533,000   | 542,700   | 692,000   | 128,000            | 190,000       | 215,000       | 181,000       | 140,500       | 152,000       |
| Total.....                        | 11,400                           | 12,000  | 11,950  | 11,900  | 11,000  | 10,900  | 3,000,000                         | 3,100,000 | 3,000,000 | 3,200,000 | 3,000,000 | 3,150,000 | 2,300,000          | 2,500,000     | 2,400,000     | 1,925,000     | 1,340,000     | 1,305,000     |

<sup>1</sup> Including independent local associations, federations, large-scale centralized associations, sales agencies, and independent service-rendering associations, but not including subsidiaries, contact locals, nor associations only renting unsold property.

<sup>2</sup> Includes members, contract members, shareholders, shippers, consignors, and patrons.

<sup>3</sup> Including dry beans and rice.

<sup>4</sup> In the light of information received subsequent to the original publication of these data, the estimates are being revised.

Farm Credit Administration.

TABLE 536.—*Associations marketing dairy products: Number listed and estimated business, 1925-33*

| Year and State        | Butter-making |                      | Cheese-making |                      | Milk-distributing |                      | Milk-bargaining |                      | Miscellaneous       |                                 | Total         |                      |
|-----------------------|---------------|----------------------|---------------|----------------------|-------------------|----------------------|-----------------|----------------------|---------------------|---------------------------------|---------------|----------------------|
|                       | Listed        | Estimated business   | Listed        | Estimated business   | Listed            | Estimated business   | Listed          | Estimated business   | Listed <sup>1</sup> | Estimated business <sup>2</sup> | Listed        | Estimated business   |
|                       | <i>Number</i> | <i>1,000 dollars</i> | <i>Number</i> | <i>1,000 dollars</i> | <i>Number</i>     | <i>1,000 dollars</i> | <i>Number</i>   | <i>1,000 dollars</i> | <i>Number</i>       | <i>1,000 dollars</i>            | <i>Number</i> | <i>1,000 dollars</i> |
| 1925-----             | 1,400         | 222,000              | 600           | 25,000               | <sup>3</sup> 140  | 160,000              | 40              | 125,000              | 17                  | 3,000                           | 2,197         | 535,000              |
| 1926-----             | 1,390         | 230,000              | 751           | 32,000               | 119               | 135,000              | 40              | 192,000              | 179                 | 11,000                          | 2,479         | 600,000              |
| 1928-----             | 1,400         | 245,000              | 740           | 30,000               | 114               | 150,000              | 47              | 200,000              | 199                 | 15,000                          | 2,500         | 640,000              |
| 1929-----             | 1,385         | 264,804              | 717           | 27,831               | 111               | 138,694              | 50              | 223,251              | 195                 | 19,320                          | 2,458         | 680,000              |
| 1930-----             | 1,366         | 219,870              | 731           | 21,790               | 101               | 142,130              | 50              | 227,460              | 187                 | 28,750                          | 2,435         | 640,000              |
| 1931-----             | 1,379         | 175,290              | 712           | 15,680               | 109               | 112,090              | 59              | 206,460              | 133                 | 10,480                          | 2,392         | 520,000              |
| 1932-----             | 1,357         | 133,860              | 645           | 11,840               | 108               | 90,410               | 68              | 148,820              | 115                 | 5,070                           | 2,293         | 390,000              |
| 1933-----             | 1,359         | 139,290              | 637           | 14,090               | 105               | 81,000               | 80              | 131,000              | 105                 | 14,620                          | 2,226         | 380,000              |
| Leading States, 1933: |               |                      |               |                      |                   |                      |                 |                      |                     |                                 |               |                      |
| New York-----         | 3             | 100                  | 13            | 400                  | 9                 | 54,500               | 6               | 19,400               | 1                   |                                 | 32            | 74,400               |
| Minnesota-----        | 594           | 42,560               | 22            | 540                  |                   |                      |                 |                      | 12                  | 6,000                           | 628           | 49,100               |
| Wisconsin-----        | 224           | 23,690               | 521           | 9,420                | 9                 | 2,580                | 6               | 4,790                | 6                   | 700                             | 766           | 41,180               |
| Illinois-----         | 11            | 1,450                | 28            | 460                  | 5                 | 1,280                | 11              | 23,370               | 19                  | 3,000                           | 74            | 29,560               |
| Iowa-----             | 246           | 24,830               |               |                      | 1                 | 40                   | 8               | 1,630                | 1                   |                                 | 256           | 26,500               |
| Pennsylvania-----     | 11            | 470                  | 6             | 100                  | 9                 | 890                  | 2               | 23,370               | 2                   | 90                              | 30            | 24,920               |
| California-----       | 12            | 10,700               |               |                      | 4                 | 1,670                | 6               | 7,300                | 2                   | 380                             | 24            | 20,050               |
| All others-----       | 258           | 35,490               | 47            | 3,170                | 68                | 20,040               | 41              | 51,140               | 62                  | 4,450                           | 476           | 114,290              |

<sup>1</sup> Including federations, sales agencies, warehouse associations, associations manufacturing ice cream, milk powder, etc.

<sup>2</sup> Not including amounts reported by federations, sales agencies, etc.

<sup>3</sup> Including associations marketing cream. In subsequent years these were included among the miscellaneous associations.

Farm Credit Administration.

TABLE 537.—*Butter and cheese made by farmers' associations and percentages of total production, 1926-33*

| Year      | Butter                 |                                 |                  | Cheese                 |                                 |                  |
|-----------|------------------------|---------------------------------|------------------|------------------------|---------------------------------|------------------|
|           | Associations reporting | Estimated quantity <sup>1</sup> | Total production | Associations reporting | Estimated quantity <sup>1</sup> | Total production |
|           | <i>Number</i>          | <i>1,000 pounds</i>             | <i>Percent</i>   | <i>Number</i>          | <i>1,000 pounds</i>             | <i>Percent</i>   |
| 1926----- | 1,480                  | 497,951                         | 34.3             | 792                    | 139,113                         | 32.5             |
| 1927----- |                        | <sup>2</sup> 500,000            | 34.4             |                        | <sup>2</sup> 125,000            | 30.7             |
| 1928----- | 1,517                  | 520,592                         | 35.0             | 788                    | 132,955                         | 30.4             |
| 1929----- | 1,511                  | 540,688                         | 33.3             | 758                    | 118,850                         | 24.6             |
| 1930----- | 1,464                  | 553,909                         | 33.4             | 778                    | 129,545                         | 25.9             |
| 1931----- | 1,473                  | 599,926                         | 36.0             | 774                    | 129,671                         | 26.3             |
| 1932----- | 1,484                  | 608,559                         | 35.9             | 756                    | 125,076                         | 25.8             |
| 1933----- | 1,486                  | 636,705                         | 36.7             | 735                    | 120,520                         | 24.2             |

<sup>1</sup> Including quantities made by associations other than those listed as primarily engaged in the manufacture of the specified product.

<sup>2</sup> Estimated.

Farm Credit Administration.



TABLE 538.—*Cooperative citrus-fruit marketings and such marketings as a percentage of production*<sup>1</sup> for specified areas, 1920-21 to 1933-34

[Revised Jan. 1, 1935]

| Marketing Season | Packed boxes handled by associations in— |                             |              |                             |              |                             |                            |                             |
|------------------|--|-----------------------------|--------------|-----------------------------|--------------|-----------------------------|----------------------------|-----------------------------|
|                  | California and Arizona                   |                             | Florida      |                             | Texas        |                             | United States <sup>2</sup> |                             |
|                  | <i>Boxes</i>                             | <i>Percent</i> <sup>1</sup> | <i>Boxes</i> | <i>Percent</i> <sup>1</sup> | <i>Boxes</i> | <i>Percent</i> <sup>1</sup> | <i>Boxes</i>               | <i>Percent</i> <sup>1</sup> |
| 1920-21.....     | 21,806,253                               | 77.9                        | 3,905,841    | 25.0                        | -----        | -----                       | 25,712,094                 | 58.8                        |
| 1921-22.....     | 12,847,455                               | 69.6                        | 3,805,942    | 24.5                        | -----        | -----                       | 16,755,850                 | 49.1                        |
| 1922-23.....     | 19,810,048                               | 78.5                        | 5,205,510    | 27.8                        | -----        | -----                       | 25,253,806                 | 57.1                        |
| 1923-24.....     | 21,671,344                               | 68.6                        | 5,548,241    | 24.9                        | 26,570       | 37.4                        | 27,246,155                 | 50.2                        |
| 1924-25.....     | 17,635,860                               | 73.3                        | 6,375,759    | 31.4                        | 65,690       | 29.9                        | 24,077,809                 | 53.9                        |
| 1925-26.....     | 23,011,773                               | 71.4                        | 4,193,316    | 22.6                        | 38,624       | 18.7                        | 27,243,713                 | 53.2                        |
| 1926-27.....     | 25,427,062                               | 69.5                        | 4,860,948    | 24.2                        | 95,053       | 23.9                        | 30,383,063                 | 53.0                        |
| 1927-28.....     | 21,510,825                               | 73.8                        | 3,878,577    | 21.6                        | 124,115      | 21.1                        | 25,843,253                 | 53.3                        |
| 1928-29.....     | 32,129,943                               | 66.9                        | 7,280,156    | 27.7                        | 262,459      | 30.6                        | 39,716,747                 | 52.6                        |
| 1929-30.....     | 22,930,811                               | 79.8                        | 5,549,105    | 30.1                        | 453,043      | 25.5                        | 28,967,192                 | 58.7                        |
| 1930-31.....     | 31,880,555                               | 70.7                        | 10,274,883   | 29.2                        | 363,430      | 26.5                        | 42,584,611                 | 52.0                        |
| 1931-32.....     | 35,704,141                               | 79.7                        | 7,322,602    | 29.5                        | 548,237      | 18.4                        | 43,708,297                 | 59.9                        |
| 1932-33.....     | 34,829,255                               | 80.2                        | 6,871,789    | 24.7                        | 249,779      | 14.8                        | 41,552,235                 | 57.1                        |
| 1933-34.....     | 35,330,130                               | 84.7                        | 5,570,867    | 21.3                        | 406,587      | 28.9                        | 41,841,342                 | 59.5                        |

<sup>1</sup> Department of Agriculture production data for 1920-21 to 1923-24, inclusive, Yearbook of Agriculture, 1934, table 194; Department of Agriculture data "Sold or for sale" for 1924-25 to 1933-34, inclusive.

<sup>2</sup> Including 1 association in Alabama and 1 in Louisiana.

<sup>3</sup> Preliminary.

Farm Credit Administration.

TABLE 539.—*Livestock handled, sales, and purchases, by terminal-market cooperative sales agencies, 1919-34*

| Year                    | Animals received <sup>1</sup> |                   |               |               |                    | Animals purchased       |               |
|-------------------------|-------------------------------|-------------------|---------------|---------------|--------------------|-------------------------|---------------|
|                         | Associations listed           | Cattle and calves | Hogs          | Sheep         | Total <sup>2</sup> | Associations purchasing | Animals       |
|                         | <i>Number</i>                 | <i>Number</i>     | <i>Number</i> | <i>Number</i> | <i>Number</i>      | <i>Number</i>           | <i>Number</i> |
| 1919.....               | 4                             | 63,876            | 381,127       | 23,940        | 563,383            | 2                       | 8,504         |
| 1920.....               | 4                             | 85,313            | 536,380       | 29,676        | 748,255            | 2                       | 6,550         |
| 1921.....               | 6                             | 163,361           | 912,095       | 103,101       | 1,310,628          | 3                       | 42,032        |
| 1922.....               | 16                            | 736,982           | 3,414,016     | 352,861       | 4,727,056          | 4                       | 86,350        |
| 1923.....               | 23                            | 1,409,322         | 7,732,437     | 733,552       | 9,933,445          | 8                       | 103,928       |
| 1924.....               | 26                            | 1,893,326         | 9,239,070     | 1,202,616     | 11,382,304         | 14                      | 242,039       |
| 1925.....               | 28                            | 1,881,241         | 7,377,084     | 1,350,311     | 10,666,069         | 18                      | 288,150       |
| 1926.....               | 27                            | 2,003,014         | 6,687,296     | 1,581,882     | 10,333,307         | 18                      | 328,016       |
| 1927.....               | 28                            | 1,678,094         | 7,149,561     | 1,598,465     | 10,426,120         | 21                      | 280,808       |
| 1928.....               | 28                            | 1,751,599         | 8,483,413     | 1,686,889     | 11,921,901         | 18                      | 325,267       |
| 1929.....               | 28                            | 1,904,066         | 8,054,184     | 2,093,136     | 12,051,386         | 20                      | 357,646       |
| 1930.....               | 30                            | 2,088,411         | 7,259,731     | 2,609,604     | 11,957,746         | 22                      | 723,422       |
| 1931.....               | 34                            | 2,216,507         | 7,169,955     | 3,028,503     | 12,414,965         | 23                      | 633,855       |
| 1932 <sup>4</sup> ..... | 38                            | 2,120,480         | 6,352,023     | 3,206,425     | 11,778,927         | 27                      | 567,183       |
| 1933 <sup>5</sup> ..... | 41                            | 2,315,000         | 7,575,000     | 3,390,000     | 13,280,000         | 28                      | 544,161       |
| 1934 <sup>6</sup> ..... | 41                            | 2,590,000         | 6,295,000     | 3,339,000     | 12,225,000         | 26                      | 481,000       |

<sup>1</sup> Includes some animals sold for yard traders.

<sup>2</sup> Includes animals not segregated by kind.

<sup>3</sup> Includes 114,757 sheep, valued at \$906,040, from producers to feeders.

<sup>4</sup> Estimates based on reports from 36 of the 38 associations.

<sup>5</sup> Estimates based on reports from 39 of the 41 associations.

<sup>6</sup> Estimates based on reports from 35 of the 41 associations.

TABLE 539.—*Livestock handled, sales, and purchases, by terminal-market cooperative sales agencies, 1919-34—Continued*

| Year                    | Total animals handled |                         | Value of sales <sup>6</sup> | Value of purchases      | Value of business handled |                          |
|-------------------------|-----------------------|-------------------------|-----------------------------|-------------------------|---------------------------|--------------------------|
|                         | Associations listed   | Animals                 |                             |                         | Associations listed       | Total <sup>7</sup>       |
|                         | Number                | Number                  | Dollars                     | Dollars                 | Number                    | Dollars                  |
| 1919.....               | 4                     | 571,887                 | 35,178,255                  | 622,335                 | 6                         | 35,800,590               |
| 1920.....               | 4                     | 754,805                 | 37,419,935                  | 453,824                 | 6                         | 37,878,759               |
| 1921.....               | 6                     | 1,352,660               | 35,309,401                  | 594,972                 | 6                         | 36,204,373               |
| 1922.....               | 16                    | 4,813,406               | 101,818,588                 | 3,069,638               | 18                        | 104,888,226              |
| 1923.....               | 23                    | 10,037,373              | 191,954,106                 | 4,631,630               | 23                        | 195,904,508              |
| 1924.....               | 26                    | 11,624,343              | 231,372,776                 | 5,222,121               | 24                        | 236,594,897              |
| 1925.....               | 28                    | 10,954,219              | 271,797,282                 | 7,023,372               | 24                        | 279,720,654              |
| 1926.....               | 27                    | 10,661,323              | 278,900,482                 | 8,249,106               | 24                        | 293,249,585              |
| 1927.....               | 28                    | 10,793,681              | 145,202,942                 | 3,036,904               | 28                        | 274,209,540              |
| 1928.....               | 28                    | 12,339,000              | 279,674,261                 | 8,741,163               | 28                        | 289,152,631              |
| 1929.....               | 28                    | <sup>2</sup> 12,755,647 | 302,894,934                 | <sup>3</sup> 11,627,701 | 28                        | 314,522,635              |
| 1930.....               | 30                    | 12,857,965              | 263,679,996                 | 10,008,169              | 30                        | 273,688,165              |
| 1931.....               | 34                    | <sup>6</sup> 13,306,743 | 183,288,867                 | 6,915,387               | 34                        | <sup>8</sup> 190,769,839 |
| 1932 <sup>4</sup> ..... | 38                    | <sup>8</sup> 12,763,652 | 119,373,515                 | 6,091,102               | 38                        | <sup>8</sup> 127,813,049 |
| 1933 <sup>5</sup> ..... | 41                    | <sup>8</sup> 14,190,000 | 120,141,418                 | 4,656,533               | 41                        | <sup>8</sup> 138,434,000 |
| 1934 <sup>5</sup> ..... | 41                    | <sup>8</sup> 13,100,000 | 126,700,000                 | 4,100,000               | 41                        | <sup>8</sup> 148,000,000 |

<sup>2</sup> Includes animals not segregated by kind.<sup>3</sup> Includes 114,757 sheep, valued at \$906,040, from producers to feeders.<sup>4</sup> Estimates based on reports from 36 of the 38 associations.<sup>5</sup> Estimates based on reports from 39 of the 41 associations.<sup>6</sup> Includes sales for yard traders.<sup>7</sup> Includes business not classified as sales or purchases.<sup>8</sup> Includes animals handled in the country.<sup>9</sup> Estimates based on reports from 35 of the 41 associations.

Farm Credit Administration.

TABLE 540.—*Freight tonnage originating on railways in the United States, 1927-33<sup>1</sup>*

| Commodity                              | Calendar year |            |            |            |            |            |                   |
|--|---------------|------------|------------|------------|------------|------------|-------------------|
|  | 1927          | 1928       | 1929       | 1930       | 1931       | 1932       | 1933 <sup>2</sup> |
| <b>FARM PRODUCTS</b>                   |               |            |            |            |            |            |                   |
| Animal and animal products:            | 1,000         | 1,000      | 1,000      | 1,000      | 1,000      | 1,000      | 1,000             |
| Animals live:                          | short tons    | short tons | short tons | short tons | short tons | short tons | short tons        |
| Horses and mules.....                  | 541           | 577        | 553        | 440        | 316        | 230        | 281               |
| Cattle and calves.....                 | 8,636         | 7,976      | 7,310      | 6,785      | 6,097      | 4,896      | 4,496             |
| Sheep and goats.....                   | 1,296         | 1,352      | 1,287      | 1,385      | 1,343      | 1,085      | 1,008             |
| Hogs.....                              | 5,369         | 5,871      | 5,594      | 4,902      | 4,501      | 3,885      | 3,608             |
| Packing-house products:                |               |            |            |            |            |            |                   |
| Fresh meats.....                       | 2,986         | 2,935      | 3,007      | 2,928      | 2,933      | 2,724      | 2,951             |
| Hides and leather.....                 | 1,010         | 914        | 913        | 847        | 782        | 655        | 734               |
| Other packing-house products.....      | 1,957         | 1,461      | 1,414      | 1,165      | 1,140      | 1,052      | 992               |
| Total.....                             | 5,953         | 5,310      | 5,334      | 4,940      | 4,855      | 4,431      | 4,677             |
| Eggs.....                              | 651           | 635        | 588        | 612        | 582        | 424        | 422               |
| Butter and cheese.....                 | 747           | 754        | 793        | 807        | 768        | 735        | 756               |
| Poultry.....                           | 407           | 407        | 418        | 419        | 416        | 382        | 402               |
| Wool.....                              | 356           | 394        | 414        | 354        | 388        | 271        | 336               |
| Other animals and products.....        | 2,054         | 2,348      | 2,576      | 2,485      | 2,366      | 1,716      | 1,665             |
| Total animals and animal products..... | 26,010        | 25,634     | 24,907     | 23,129     | 21,632     | 18,055     | 17,651            |
| <b>Vegetable products:</b>             |               |            |            |            |            |            |                   |
| Cotton.....                            | 4,182         | 3,772      | 3,940      | 3,032      | 2,432      | 2,777      | 3,374             |
| Fruits and vegetables.....             | 12,029        | 12,947     | 12,875     | 12,589     | 11,906     | 9,866      | 8,295             |
| Potatoes.....                          | 4,728         | 4,511      | 4,425      | 4,332      | 4,114      | 3,418      | 3,466             |
| <b>Grain and grain products:</b>       |               |            |            |            |            |            |                   |
| Grain:                                 |               |            |            |            |            |            |                   |
| Wheat.....                             | 26,237        | 26,950     | 27,019     | 25,466     | 26,228     | 19,120     | 16,501            |
| Corn.....                              | 13,162        | 17,045     | 15,258     | 13,966     | 10,728     | 9,544      | 12,310            |
| Oats.....                              | 5,518         | 5,888      | 5,713      | 5,184      | 3,970      | 3,369      | 3,853             |
| Other grain.....                       | 5,216         | 5,506      | 4,477      | 4,045      | 2,924      | 2,229      | 2,995             |
| Grain products:                        |               |            |            |            |            |            |                   |
| Flour and meal.....                    | 10,027        | 10,754     | 10,627     | 10,546     | 10,067     | 9,319      | 8,998             |
| Other mill products.....               | 10,179        | 10,580     | 10,821     | 10,610     | 8,783      | 6,629      | 6,779             |
| Total.....                             | 70,339        | 76,723     | 73,915     | 69,837     | 62,700     | 50,240     | 50,936            |

See footnotes at end of table on page 742.

TABLE 540.—*Freight tonnage originating on railways in the United States, 1927-33*<sup>1</sup>—Continued

| Commodity                                | Calendar year           |                         |                         |                         |                         |                         |                         |
|--|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|  | 1927                    | 1928                    | 1929                    | 1930                    | 1931                    | 1932                    | 1933 <sup>2</sup>       |
| <b>FARM PRODUCTS—continued</b>           |                         |                         |                         |                         |                         |                         |                         |
| Vegetable products—Contd.                | <i>1,000 short tons</i> | <i>1,000 short tons</i> | <i>1,000 short tons</i> | <i>1,000 short tons</i> | <i>1,000 short tons</i> | <i>1,000 short tons</i> | <i>1,000 short tons</i> |
| Hay, straw, and alfalfa.....             | 4,468                   | 3,999                   | 3,697                   | 3,494                   | 2,174                   | 1,569                   | 1,476                   |
| Sugar, sirup, glucose, and molasses..... | 5,584                   | 5,604                   | 5,858                   | 5,659                   | 5,142                   | 4,286                   | 4,779                   |
| Tobacco.....                             | 1,053                   | 945                     | 989                     | 1,008                   | 816                     | 642                     | 680                     |
| Other vegetable products....             | 18,469                  | 16,686                  | 15,502                  | 16,436                  | 13,346                  | 12,405                  | 12,845                  |
| Total vegetable products....             | 120,852                 | 125,187                 | 121,201                 | 116,387                 | 102,630                 | 85,203                  | 86,481                  |
| Canned goods (food products).....        | 4,204                   | 4,805                   | 5,029                   | 4,751                   | 3,954                   | 3,167                   | 3,308                   |
| Total farm products.....                 | 151,066                 | 155,626                 | 151,137                 | 144,267                 | 128,216                 | 106,425                 | 107,440                 |
| <b>OTHER FREIGHT</b>                     |                         |                         |                         |                         |                         |                         |                         |
| Products of mines.....                   | 713,731                 | 696,583                 | 737,879                 | 642,537                 | 501,903                 | 362,226                 | 395,065                 |
| Products of forests.....                 | 99,391                  | 96,737                  | 94,855                  | 89,366                  | 43,024                  | 26,109                  | 33,165                  |
| Manufactures.....                        | 279,407                 | 300,043                 | 319,177                 | 297,353                 | 198,270                 | 136,229                 | 148,922                 |
| Merchandise, all i. c. l. freight.....   | 38,432                  | 36,954                  | 36,043                  | 29,667                  | 22,773                  | 15,234                  | 14,351                  |
| Total tonnage.....                       | 1,282,027               | 1,235,943               | 1,339,091               | 1,153,190               | 894,186                 | 646,223                 | 698,943                 |

<sup>1</sup> Weight as delivered at original shipping point. In the case of freight transported over several different railways, each ton is counted only when transported by the first railway. Some traffic, reshipped under new billing without benefit of transit privileges or proportional rates, may be counted more than once.

<sup>2</sup> Preliminary.

Bureau of Agricultural Economics; compiled from reports of the Interstate Commerce Commission.

Figures for earlier years appear in previous issues of the Yearbook.

TABLE 541.—*Index numbers of freight rates on livestock, wheat, and cotton, 1913-14 to 1934-35*<sup>1</sup>

| Year beginning July        | Livestock        |                  |                   |               |                  |                  |               |                  |                  |               | Wheat | Cotton |
|----------------------------|------------------|------------------|-------------------|---------------|------------------|------------------|---------------|------------------|------------------|---------------|-------|--------|
|                            | Cattle           |                  |                   |               | Hogs             |                  |               | Sheep            |                  |               |       |        |
|                            | Western district | Eastern district | Southern district | United States | Western district | Eastern district | United States | Western district | Eastern district | United States |       |        |
| 1913-14.....               | 100              | 100              | 100               | 100           | 100              | 100              | 100           | 100              | 100              | 100           | 100   | 100    |
| 1914-15.....               | 100              | 104              | 100               | 100           | 99               | 102              | 100           | 99               | 102              | 99            | 100   | 101    |
| 1915-16.....               | 100              | 108              | 99                | 101           | 99               | 107              | 101           | 98               | 105              | 99            | 101   | 100    |
| 1916-17.....               | 100              | 113              | 98                | 102           | 99               | 116              | 102           | 98               | 112              | 100           | 102   | 101    |
| 1917-18.....               | 101              | 116              | 98                | 103           | 100              | 122              | 104           | 99               | 129              | 103           | 103   | 101    |
| 1918-19.....               | 126              | 158              | 120               | 129           | 124              | 169              | 132           | 118              | 167              | 126           | 130   | 128    |
| 1919-20.....               | 128              | 157              | 120               | 131           | 124              | 169              | 132           | 119              | 167              | 127           | 131   | 128    |
| 1920-21.....               | 166              | 207              | 148               | 170           | 161              | 222              | 172           | 152              | 225              | 164           | 170   | 164    |
| 1921-22.....               | 164              | 211              | 147               | 169           | 160              | 230              | 173           | 148              | 226              | 160           | 189   | 160    |
| 1922-23.....               | 155              | 197              | 137               | 160           | 153              | 218              | 164           | 137              | 199              | 147           | 180   | 150    |
| 1923-24.....               | 154              | 201              | 136               | 159           | 153              | 217              | 164           | 137              | 200              | 147           | 160   | 150    |
| 1924-25.....               | 152              | 199              | 136               | 158           | 151              | 214              | 163           | 137              | 200              | 146           | 158   | 150    |
| 1925-26.....               | 152              | 199              | 136               | 158           | 150              | 214              | 161           | 135              | 200              | 145           | 157   | 150    |
| 1926-27.....               | 152              | 199              | 136               | 157           | 150              | 214              | 161           | 134              | 200              | 144           | 157   | 150    |
| 1927-28.....               | 151              | 201              | 136               | 157           | 150              | 214              | 161           | 134              | 200              | 144           | 157   | 149    |
| 1928-29.....               | 151              | 198              | 136               | 157           | 150              | 205              | 160           | 135              | 189              | 143           | 156   | 148    |
| 1929-30.....               | 151              | 195              | 136               | 156           | 150              | 199              | 159           | 135              | 181              | 142           | 155   | 148    |
| 1930-31.....               | 151              | 190              | 136               | 156           | 150              | 198              | 158           | 135              | 183              | 142           | 155   | 146    |
| 1931-32.....               | 157              | 187              | 136               | 160           | 149              | 198              | 158           | 135              | 185              | 143           | 155   | 139    |
| 1932-33.....               | 163              | 186              | 136               | 165           | 148              | 199              | 157           | 134              | 185              | 142           | 156   | 146    |
| 1933-34.....               | 161              | 186              | 136               | 163           | 147              | 199              | 157           | 134              | 185              | 142           | 155   | 146    |
| 1934-35 <sup>2</sup> ..... | 155              | 186              | 136               | 158           | 148              | 199              | 157           | 134              | 185              | 142           | 154   | 146    |

<sup>1</sup> Based on rates in effect through Mar. 4, 1935, except cotton which is through Mar. 7.

<sup>2</sup> To preserve comparability, where alternative rates depending on loading were established during these years, rate for highest weight to which shippers could load without having cotton compressed at own expense was used in computation of index.

<sup>3</sup> Preliminary.

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These relatives are based on the average of the rates in effect during the crop year. Rates in effect in 1913=100. For points of origin and destination, see Yearbook, 1926, tables 550 and 551.

TABLE 542.—*Cooperative extension workers:*<sup>1</sup> *Number employed, United States, June 30, 1933, and June 30, 1934*

| State or Territory  | County agricultural agents and assistants <sup>2</sup> |                   | County home demonstration agents and assistants |       | County club agents and assistants |       | Administrators and supervisors |       | Subject-matter specialists |       | Total |       |
|---------------------|--|-------------------|---|-------|-----------------------------------|-------|--------------------------------|-------|----------------------------|-------|-------|-------|
|                     | 1933   | 1934 <sup>2</sup> | 1933  | 1934  | 1933                              | 1934  | 1933                           | 1934  | 1933                       | 1934  | 1933  | 1934  |
| Alabama.....        | 95   | 95                | 59  | 70    | -----                             | ----- | 12                             | 13    | 12                         | 23    | 173   | 201   |
| Alaska.....         | -----  | -----             | -----   | ----- | -----                             | ----- | 3                              | 2     | 1                          | 1     | 4     | 3     |
| Arizona.....        | 17   | 15                | 5   | 5     | -----                             | ----- | 3                              | 3     | 7                          | 7     | 32    | 30    |
| Arkansas.....       | 87   | 81                | 57  | 72    | -----                             | ----- | 15                             | 15    | 16                         | 12    | 175   | 180   |
| California.....     | 86   | 95                | 30  | 26    | -----                             | ----- | 12                             | 16    | 27                         | 24    | 155   | 161   |
| Colorado.....       | 26   | 47                | 6   | 7     | -----                             | ----- | 5                              | 4     | 13                         | 21    | 50    | 79    |
| Connecticut.....    | 10   | 10                | 8   | 8     | 13                                | 13    | 5                              | 4     | 24                         | 24    | 60    | 59    |
| Delaware.....       | 3  | 3                 | 3   | 3     | 3                                 | 3     | 3                              | 3     | 6                          | 5     | 18    | 17    |
| Florida.....        | 47   | 49                | 34  | 33    | -----                             | ----- | 11                             | 11    | 15                         | 16    | 107   | 109   |
| Georgia.....        | 165  | 169               | 100   | 100   | -----                             | ----- | 9                              | 15    | 10                         | 27    | 284   | 311   |
| Hawaii.....         | 6  | 6                 | 6   | 6     | -----                             | ----- | 3                              | 2     | 4                          | 4     | 19    | 18    |
| Idaho.....          | 20   | 31                | 6   | 6     | 2                                 | 2     | 7                              | 6     | 17                         | 19    | 52    | 64    |
| Illinois.....       | 109  | 98                | 33  | 35    | 4                                 | 3     | 13                             | 13    | 30                         | 27    | 189   | 176   |
| Indiana.....        | 81   | 91                | 11  | 10    | 5                                 | 5     | 12                             | 19    | 33                         | 37    | 142   | 162   |
| Iowa.....           | 103  | 136               | 19  | 18    | 2                                 | 1     | 17                             | 16    | 62                         | 58    | 203   | 229   |
| Kansas.....         | 79   | 105               | 26  | 26    | 1                                 | 1     | 13                             | 19    | 31                         | 39    | 150   | 190   |
| Kentucky.....       | 86   | 123               | 29  | 30    | -----                             | ----- | 18                             | 24    | 35                         | 28    | 165   | 205   |
| Louisiana.....      | 75   | 74                | 44  | 45    | -----                             | ----- | 16                             | 15    | 17                         | 15    | 152   | 149   |
| Maine.....          | 15   | 15                | 14  | 14    | 7                                 | 7     | 5                              | 5     | 12                         | 11    | 53    | 52    |
| Maryland.....       | 31   | 31                | 26  | 25    | -----                             | ----- | 5                              | 5     | 33                         | 34    | 95    | 95    |
| Massachusetts.....  | 20   | 17                | 16  | 14    | 26                                | 25    | 8                              | 8     | 22                         | 22    | 92    | 86    |
| Michigan.....       | 66   | 67                | 5   | 4     | 9                                 | 9     | 16                             | 20    | 44                         | 41    | 140   | 141   |
| Minnesota.....      | 58   | 81                | 13  | 14    | 15                                | 2     | 12                             | 12    | 25                         | 28    | 123   | 137   |
| Mississippi.....    | 98   | 102               | 64  | 71    | -----                             | ----- | 18                             | 18    | 24                         | 24    | 204   | 215   |
| Missouri.....       | 71   | 138               | 15  | 15    | -----                             | ----- | 8                              | 8     | 19                         | 21    | 113   | 182   |
| Montana.....        | 28   | 37                | 9   | 9     | -----                             | ----- | 5                              | 5     | 15                         | 14    | 57    | 65    |
| Nebraska.....       | 46   | 92                | 14  | 15    | 1                                 | 2     | 9                              | 9     | 24                         | 30    | 94    | 143   |
| Nevada.....         | 12   | 13                | 5   | 4     | -----                             | ----- | 3                              | 3     | 3                          | 2     | 25    | 22    |
| New Hampshire.....  | 11   | 11                | 10  | 10    | 13                                | 13    | 5                              | 5     | 13                         | 13    | 52    | 52    |
| New Jersey.....     | 21   | 24                | 15  | 17    | 7                                 | 7     | 4                              | 4     | 17                         | 18    | 64    | 70    |
| New Mexico.....     | 19   | 21                | 8   | 7     | -----                             | ----- | 6                              | 6     | 5                          | 7     | 38    | 41    |
| New York.....       | 73   | 84                | 44  | 44    | 38                                | 41    | 10                             | 11    | 87                         | 79    | 252   | 259   |
| North Carolina..... | 108  | 118               | 93  | 84    | -----                             | ----- | 15                             | 15    | 21                         | 25    | 237   | 242   |
| North Dakota.....   | 23   | 63                | 4   | 4     | -----                             | ----- | 1                              | 6     | 7                          | 15    | 12    | 48    |
| Ohio.....           | 70   | 84                | 21  | 21    | 11                                | 11    | 12                             | 12    | 52                         | 41    | 166   | 169   |
| Oklahoma.....       | 105  | 125               | 74  | 83    | -----                             | ----- | 16                             | 15    | 13                         | 18    | 208   | 241   |
| Oregon.....         | 34   | 49                | 7   | 7     | 8                                 | 8     | 7                              | 8     | 12                         | 14    | 68    | 86    |
| Pennsylvania.....   | 73   | 73                | 46  | 45    | -----                             | ----- | 12                             | 13    | 42                         | 41    | 173   | 172   |
| Puerto Rico.....    | -----  | -----             | -----   | ----- | -----                             | ----- | -----                          | ----- | 1                          | 1     | 1     | 1     |
| Rhode Island.....   | 3  | 3                 | 3   | 3     | 3                                 | 3     | 3                              | 3     | 7                          | 7     | 19    | 19    |
| South Carolina..... | 77   | 71                | 55  | 54    | -----                             | ----- | 15                             | 14    | 13                         | 19    | 160   | 158   |
| South Dakota.....   | 17   | 73                | 14  | 13    | 4                                 | 3     | 7                              | 12    | 15                         | 7     | 57    | 108   |
| Tennessee.....      | 88   | 104               | 43  | 44    | -----                             | ----- | 12                             | 12    | 19                         | 22    | 162   | 182   |
| Texas.....          | 226  | 264               | 149   | 165   | -----                             | ----- | 26                             | 27    | 25                         | 25    | 426   | 481   |
| Utah.....           | 22   | 25                | 7   | 6     | -----                             | ----- | 5                              | 5     | 14                         | 13    | 48    | 49    |
| Vermont.....        | 14   | 14                | 11  | 11    | 11                                | 11    | 5                              | 5     | 11                         | 10    | 52    | 51    |
| Virginia.....       | 101  | 129               | 48  | 50    | -----                             | ----- | 17                             | 17    | 87                         | 84    | 203   | 230   |
| Washington.....     | 39   | 56                | 11  | 10    | 3                                 | 3     | 3                              | 3     | 10                         | 10    | 66    | 82    |
| West Virginia.....  | 49   | 47                | 25  | 21    | 8                                 | 7     | 8                              | 9     | 19                         | 20    | 109   | 113   |
| Wisconsin.....      | 47   | 61                | 5   | 6     | 8                                 | 7     | 11                             | 12    | 42                         | 45    | 113   | 131   |
| Wyoming.....        | 20   | 24                | 7   | 6     | -----                             | ----- | 4                              | 4     | 8                          | 7     | 39    | 41    |
| Total.....          | 2,780  | 3,344             | 1,357   | 1,396 | 202                               | 188   | 475                            | 512   | 1,079                      | 1,111 | 5,893 | 6,551 |

<sup>1</sup> Includes both white and Negro extension workers.<sup>2</sup> Increase due mainly to Agricultural Adjustment work.

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TABLE 543.—*Cooperative extension work: Projects and percentage of agents' and specialists' <sup>1</sup> time devoted to each, 1926-33*

| Project                              | 1926    | 1927    | 1928    | 1929    | 1930    | 1931    | 1932    | 1933    |
|--------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
|                                      | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| Soils.....                           | 5.3     | 4.8     | 5.1     | 5.1     | 15.2    | 13.8    | 12.1    | 14.3    |
| Farm crops.....                      | 13.1    | 12.4    | 11.5    | 11.6    | 8.7     | 9.4     | 10.3    | 9.8     |
| Horticulture.....                    | 7.3     | 7.1     | 7.3     | 7.0     | 8.7     | 9.4     | 10.3    | 9.8     |
| Forestry.....                        | 7.7     | 9.9     | 1.0     | 1.0     | 9.9     | 9.9     | 9.9     | 9.9     |
| Animal husbandry.....                | 7.5     | 8.2     | 7.8     | 7.6     | 6.5     | 6.7     | 6.8     | 5.5     |
| Dairy husbandry.....                 | 7.1     | 7.9     | 8.7     | 8.6     | 7.7     | 6.7     | 5.8     | 4.7     |
| Poultry husbandry.....               | 9.0     | 8.8     | 8.1     | 7.9     | 7.6     | 6.8     | 6.5     | 5.8     |
| Rural engineering.....               | 3.6     | 3.4     | 3.3     | 3.2     | 3.3     | 3.1     | 2.9     | 2.6     |
| Rodents and insects.....             | 1.7     | 1.5     | 1.3     | 1.1     | 1.3     | 1.4     | 1.6     | 1.3     |
| Agricultural economics.....          | 4.0     | 4.1     | 4.0     | 4.3     | 6.2     | 6.8     | 7.4     | 8.5     |
| Foods and nutrition.....             | 7.2     | 7.1     | 7.0     | 7.5     | 7.0     | 7.1     | 8.0     | 8.0     |
| Child training and care.....         |         |         |         |         | 3.6     | .6      | .7      | .6      |
| Clothing.....                        | 7.1     | 6.8     | 6.8     | 6.9     | 6.7     | 6.6     | 6.4     | 6.3     |
| Home management.....                 | 1.5     | 1.5     | 1.7     | 2.2     | 2.1     | 2.0     | 2.0     | 1.7     |
| House furnishings.....               | 1.8     | 2.0     | 2.4     | 2.6     | 2.6     | 2.7     | 2.7     | 2.5     |
| Home health and sanitation.....      | 1.2     | 1.2     | 1.2     | 1.2     | 1.3     | 1.2     | 1.0     | 1.1     |
| Community activities.....            | 5.9     | 6.0     | 5.8     | 5.9     | 4.0     | 5.3     | 5.0     | 4.7     |
| Formulation of the extension program |         |         |         |         | 3.7     | 3.7     | 4.4     | 4.4     |
| Organization.....                    |         |         |         |         | 7.1     | 7.2     | 8.0     | 8.4     |
| Miscellaneous.....                   | 16.0    | 16.3    | 17.0    | 16.3    | 7.5     | 8.0     | 7.5     | 8.9     |

<sup>1</sup> Only field work of specialists as reported by county extension agents is included.<sup>2</sup> Since 1929 the percentage of time devoted to "soils" has been included in "farm crops."<sup>3</sup> Prior to 1930 the information on "child training and care", "formulation of the extension program", and "organization" was included in "miscellaneous."

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TABLE 544.—*Extension activities and accomplishments, as reported by all county extension agents, 1928-33*

| Total activity or accomplishment relating to extension | 1928       | 1929       | 1930       | 1931       | 1932       | 1933       |
|--|------------|------------|------------|------------|------------|------------|
|  | Number     | Number     | Number     | Number     | Number     | Number     |
| Farm visits made.....                                  | 1,506,510  | 1,633,154  | 1,758,743  | 1,822,272  | 1,831,319  | 1,693,319  |
| Home visits made.....                                  | 432,433    | 459,294    | 546,208    | 602,885    | 633,784    | 658,095    |
| Office calls received.....                             | 3,687,570  | 3,991,725  | 4,317,565  | 5,156,854  | 5,202,539  | 8,007,508  |
| Telephone calls received.....                          | 2,558,899  | 2,710,723  | 3,015,707  | 3,063,569  | 3,208,761  | 3,675,176  |
| News articles or stories published.....                | 371,331    | 423,600    | 449,854    | 490,507    | 491,687    | 469,122    |
| Individual letters written.....                        | 4,510,657  | 4,712,940  | 4,501,988  | 4,551,924  | 4,412,223  | 4,569,338  |
| Different circular letters prepared.....               |            |            | 214,561    | 274,422    | 247,536    | 250,480    |
| Bulletins distributed.....                             | 6,608,604  | 6,345,458  | 6,657,561  | 8,203,294  | 8,216,890  | 8,214,816  |
| Radio talks made.....                                  |            |            | 4,148      | 5,539      | 8,133      | 7,881      |
| Events at which exhibits were shown.....               | 8,999      | 9,825      | 20,476     | 19,663     | 22,341     | 22,510     |
| Training meetings held for local leaders.....          | 42,902     | 41,604     | 42,903     | 32,510     | 55,334     | 60,021     |
| Method demonstration meetings held.....                | 437,993    | 486,398    | 402,458    | 461,793    | 491,060    | 474,858    |
| Meetings at result demonstrations.....                 |            |            | 66,368     | 70,098     | 66,525     | 60,065     |
| Tours conducted.....                                   |            |            | 8,772      | 9,851      | 10,699     | 10,646     |
| Achievement days held.....                             |            |            | 14,720     | 15,450     | 16,759     | 17,527     |
| Encampments held.....                                  | 2,781      | 2,921      | 3,762      | 3,665      | 3,335      | 2,468      |
| All meetings held.....                                 | 683,305    | 771,321    | 750,379    | 851,197    | 906,373    | 878,897    |
| Attendance at all meetings held.....                   | 21,951,317 | 24,873,236 | 25,605,485 | 30,287,348 | 31,495,656 | 30,139,724 |
| Result demonstrations conducted.....                   | 851,526    | 929,744    | 934,182    | 1,090,011  | 1,228,082  | 1,378,315  |
| Voluntary local leaders assisting with—                |            |            |            |            |            |            |
| Adult extension.....                                   | 179,559    | 201,882    | 233,043    | 278,633    | 311,604    | 327,960    |
| Junior extension.....                                  | 58,258     | 71,636     | 85,344     | 98,394     | 105,254    | 104,503    |
| Adult home demonstration groups.....                   |            |            | 34,959     | 38,358     | 41,131     | 43,108     |
| Members of such groups.....                            |            |            | 646,340    | 760,171    | 803,203    | 859,967    |

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TABLE 545.—*4-H club work: Number of clubs, enrollment, projects completed, etc., 1927-33*

| Item   | 1927        | 1928        | 1929        | 1930        | 1931        | 1932        | 1933        |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Junior clubs.....                              | 44, 188     | 46, 671     | 52, 180     | 56, 180     | 60, 781     | 59, 081     | 57, 400     |
| Different boys enrolled.....                   | 249, 553    | 270, 534    | 303, 509    | 333, 197    | 360, 653    | 381, 573    | 378, 143    |
| Different girls enrolled.....                  | 370, 159    | 393, 406    | 452, 587    | 489, 517    | 529, 721    | 544, 089    | 543, 822    |
| Total enrollment.....                          | 619, 712    | 663, 940    | 756, 096    | 822, 714    | 890, 374    | 925, 612    | 921, 965    |
| Different boys completing 1.....               | 153, 324    | 175, 069    | 201, 910    | 222, 472    | 252, 328    | 271, 339    | 266, 601    |
| Different girls completing 1.....              | 245, 783    | 272, 510    | 305, 577    | 331, 873    | 376, 915    | 399, 383    | 399, 253    |
| Total completing.....                          | 399, 107    | 447, 579    | 507, 487    | 554, 345    | 629, 243    | 670, 722    | 665, 854    |
| Projects started.....                          | 1, 330, 239 | 1, 466, 584 | 1, 614, 149 | 1, 535, 619 | 1, 693, 866 | 1, 765, 480 | 1, 762, 855 |
| Projects completed (total) 1.....              | 776, 029    | 882, 795    | 995, 262    | 971, 308    | 1, 114, 065 | 1, 205, 108 | 1, 185, 563 |
| Cereals.....                                   | 25, 789     | 26, 997     | 29, 197     | 35, 380     | 44, 595     | 47, 414     | 42, 066     |
| Legumes and forage.....                        | 5, 253      | 6, 137      | 7, 559      | 7, 902      | 10, 582     | 12, 757     | 10, 921     |
| Potatoes, cotton, and other special crops..... | 25, 228     | 36, 475     | 40, 380     | 45, 010     | 45, 883     | 42, 406     | 41, 046     |
| Horticulture.....                              | 68, 922     | 112, 296    | 124, 459    | 123, 751    | 156, 392    | 178, 943    | 173, 898    |
| Forestry.....                                  | 2, 192      | 2, 719      | 3, 852      | 5, 379      | 7, 877      | 11, 416     | 11, 938     |
| Rural engineering.....                         |             |             |             | 6, 701      | 7, 168      | 7, 298      | 8, 045      |
| Dairy.....                                     | 23, 076     | 29, 463     | 37, 218     | 36, 554     | 38, 862     | 38, 670     | 35, 873     |
| Animal husbandry.....                          | 44, 341     | 48, 233     | 54, 227     | 57, 790     | 68, 547     | 78, 590     | 78, 211     |
| Poultry.....                                   | 56, 756     | 56, 900     | 60, 020     | 61, 519     | 62, 058     | 66, 124     | 67, 901     |
| Agricultural economics.....                    | 4, 925      | 8, 361      | 7, 379      | 6, 448      | 6, 558      | 6, 696      | 7, 423      |
| Food.....                                      | 142, 302    | 167, 058    | 182, 877    | 193, 242    | 226, 390    | 247, 914    | 252, 555    |
| Nutrition.....                                 | 54, 451     | 62, 790     | 65, 652     |             |             |             |             |
| Child training and care.....                   |             |             |             | 24, 508     | 5, 360      | 6, 142      | 2, 706      |
| Clothing.....                                  | 146, 181    | 162, 291    | 190, 249    | 209, 656    | 231, 749    | 233, 341    | 233, 701    |
| Home management.....                           | 13, 822     | 16, 309     | 16, 237     | 17, 472     | 21, 000     | 24, 450     | 20, 278     |
| House furnishings.....                         | 30, 024     | 36, 274     | 40, 999     | 49, 571     | 52, 753     | 62, 435     | 64, 473     |
| Home health and sanitation.....                | 56, 352     | 59, 342     | 77, 932     | 67, 810     | 79, 812     | 84, 519     | 78, 091     |
| Miscellaneous.....                             | 56, 415     | 51, 145     | 57, 025     | 42, 615     | 48, 479     | 55, 993     | 56, 417     |

<sup>1</sup> Different boys and girls completing is the sum of the individual boys and girls completing 1 or more projects in contrast to project completions which is the sum of all the projects completed by all boys and girls.

<sup>2</sup> Prior to 1930, the work on "child training and care" was included in "miscellaneous."

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TABLE 546.—*Imports and price per pound of raw silk and production, imports and price per pound of rayon yarn, United States, 1924-34*

| Calendar year           | RAW SILK                 |                            | RAYON YARN   |                          |                            |              |
|-------------------------|--------------------------|----------------------------|--------------|--------------------------|----------------------------|--------------|
|                         | Net imports <sup>1</sup> | Average price <sup>2</sup> | Production   | Net imports <sup>3</sup> | Average price <sup>4</sup> |              |
|                         |                          |                            |              |                          | 150 A denier               | 300 A denier |
|                         | 1,000 pounds             | Dollars                    | 1,000 pounds | 1,000 pounds             | Dollars                    | Dollars      |
| 1924.....               | 59, 626                  | 5. 917                     | 36, 330      | 6, 569                   | 2. 113                     | 1. 871       |
| 1925.....               | 76, 003                  | 6. 341                     | 51, 900      | 12, 363                  | 2. 004                     | 1. 754       |
| 1926.....               | 76, 870                  | 5. 937                     | 62, 690      | 13, 918                  | 1. 810                     | 1. 603       |
| 1927.....               | 85, 036                  | 5. 100                     | 75, 555      | 17, 740                  | 1. 489                     | 1. 289       |
| 1928.....               | 87, 172                  | 4. 859                     | 97, 230      | 15, 113                  | 1. 500                     | 1. 300       |
| 1929.....               | 96, 848                  | <sup>5</sup> 4. 777        | 121, 280     | 20, 318                  | 1. 246                     | 1. 073       |
| 1930.....               | 80, 581                  | <sup>6</sup> 3. 173        | 126, 805     | 6, 009                   | 1. 059                     | . 900        |
| 1931.....               | 87, 540                  | <sup>7</sup> 2. 233        | 150, 880     | 3, 460                   | . 758                      | . 636        |
| 1932.....               | 74, 841                  | <sup>8</sup> 1. 473        | 134, 810     | 2, 501                   | . 660                      | . 538        |
| 1933.....               | 70, 361                  | <sup>9</sup> 1. 536        | 208, 530     | 6, 157                   | . 609                      | . 503        |
| 1934 <sup>6</sup> ..... | 60, 757                  | <sup>10</sup> 1. 200       | 210, 330     | 7 875                    | . 587                      | . 487        |

<sup>1</sup> Net imports are imports minus reexports; beginning 1934, imports for consumption.

<sup>2</sup> Average of monthly average prices of Japanese Kansai, No. 1, except as noted.

<sup>3</sup> Net imports in 1924 are imports minus reexports; 1925-33 figures are imports minus exports and reexports; 1934, exports minus imports for consumption.

<sup>4</sup> Average of monthly average prices of domestic yarn, first quality. The count indicates the number of deniers or 1/16-decigram units, in weight, of a standard length of 450 meters. Since the standard is based on an arbitrary fixed length and a variable weight, the finer the yarn the smaller the count; 150 denier count, a size commonly used, is fine and 300 denier count is coarse.

<sup>5</sup> Average of monthly average prices of Japanese Best, No. 1 x 13-15.

<sup>6</sup> Preliminary.

<sup>7</sup> Net exports.

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Compiled from annual issues of Commerce and Navigation of the United States Department of Commerce, except production of rayon yarn which is from the Textile Organon, a publication of the Tubize Chatillon Corporation. Prices are from bulletins of the U. S. Bureau of Labor statistics.

TABLE 547.—*Gold value of the dollar, and dollar value of gold in London,<sup>1</sup> April 1933–March 1935*

| Date                   | Gold value of the dollar | Dollar value of gold per ounce |          | Date    | Gold value of the dollar | Dollar value of gold per ounce |          | Date     | Gold value of the dollar | Dollar value of gold per ounce |          |
|------------------------|--------------------------|--------------------------------|----------|---------|--------------------------|--------------------------------|----------|----------|--------------------------|--------------------------------|----------|
|                        |                          | Actual                         | Relative |         |                          | Actual                         | Relative |          |                          | Actual                         | Relative |
| 1933                   | Cents                    | Dollars                        |          | 1933    | Cents                    | Dollars                        |          | 1934     | Cents                    | Dollars                        |          |
| Apr. 1-15 <sup>1</sup> | 100.0                    | 20.67                          | 100.0    | Dec. 4  | 84.1                     | 32.23                          | 155.9    | Aug. 7   | 59.3                     | 34.83                          | 168.5    |
| Apr. 3                 | 100.2                    | 20.62                          | 99.8     | Dec. 11 | 63.2                     | 32.73                          | 158.3    | Aug. 13  | 58.6                     | 35.25                          | 170.5    |
| Apr. 10                | 100.1                    | 20.64                          | 99.9     | Dec. 18 | 63.5                     | 32.54                          | 157.4    | Aug. 20  | 58.8                     | 35.18                          | 170.2    |
| Apr. 17                | 100.0                    | 20.67                          | 100.0    | Dec. 27 | 63.7                     | 32.43                          | 156.9    | Aug. 27  | 58.6                     | 35.28                          | 170.7    |
| Apr. 24                | 90.2                     | 22.92                          | 110.9    |         |                          |                                |          | Sept. 3  | 58.5                     | 35.32                          | 170.9    |
| May 1                  | 85.9                     | 24.07                          | 116.4    | 1934    |                          |                                |          | Sept. 10 | 58.7                     | 35.22                          | 170.4    |
| May 8                  | 84.9                     | 24.35                          | 117.8    | Jan. 2  | 62.9                     | 32.88                          | 159.1    | Sept. 17 | 58.8                     | 35.18                          | 170.2    |
| May 15                 | 81.8                     | 24.39                          | 118.0    | Jan. 8  | 64.1                     | 32.24                          | 156.0    | Sept. 24 | 58.8                     | 35.18                          | 170.2    |
| May 22                 | 86.5                     | 23.89                          | 115.6    | Jan. 15 | 62.9                     | 32.86                          | 159.0    | Oct. 1   | 58.9                     | 35.07                          | 169.7    |
| May 29                 | 84.1                     | 24.59                          | 119.0    | Jan. 22 | 62.0                     | 33.33                          | 161.2    | Oct. 8   | 59.0                     | 35.05                          | 169.6    |
| June 6                 | 83.4                     | 24.78                          | 119.9    | Jan. 29 | 62.5                     | 33.06                          | 159.9    | Oct. 15  | 58.9                     | 35.07                          | 169.7    |
| June 12                | 80.9                     | 25.54                          | 123.6    | Feb. 5  | 59.9                     | 34.51                          | 167.0    | Oct. 22  | 59.1                     | 34.99                          | 169.3    |
| June 19                | 81.6                     | 25.34                          | 122.6    | Feb. 12 | 59.9                     | 34.51                          | 167.0    | Oct. 29  | 59.3                     | 34.86                          | 168.7    |
| June 26                | 79.6                     | 25.95                          | 125.5    | Feb. 19 | 59.8                     | 34.56                          | 167.2    | Nov. 5   | 59.3                     | 34.83                          | 168.5    |
| July 3                 | 75.1                     | 27.54                          | 133.2    | Feb. 26 | 59.6                     | 34.67                          | 167.7    | Nov. 12  | 59.4                     | 34.82                          | 168.5    |
| July 10                | 69.3                     | 29.83                          | 144.3    | Mar. 5  | 59.5                     | 34.72                          | 168.0    | Nov. 19  | 59.4                     | 34.80                          | 168.4    |
| July 17                | 69.3                     | 29.82                          | 144.3    | Mar. 12 | 59.5                     | 34.74                          | 168.1    | Nov. 26  | 59.4                     | 34.79                          | 168.3    |
| July 24                | 71.6                     | 28.88                          | 139.7    | Mar. 19 | 59.5                     | 34.74                          | 168.1    | Dec. 3   | 59.4                     | 34.79                          | 168.3    |
| July 31                | 74.3                     | 27.81                          | 134.5    | Mar. 26 | 59.4                     | 34.77                          | 168.2    | Dec. 10  | 59.5                     | 34.75                          | 168.1    |
| Aug. 8                 | 74.0                     | 27.92                          | 135.1    | Apr. 3  | 59.5                     | 34.75                          | 168.1    | Dec. 17  | 59.4                     | 34.77                          | 168.2    |
| Aug. 14                | 74.7                     | 27.68                          | 133.9    | Apr. 9  | 59.4                     | 34.77                          | 168.2    | Dec. 24  | 59.5                     | 34.76                          | 168.2    |
| Aug. 21                | 73.2                     | 28.23                          | 136.6    | Apr. 16 | 59.5                     | 34.75                          | 168.1    | Dec. 31  | 59.4                     | 34.81                          | 168.4    |
| Aug. 28                | 71.2                     | 29.04                          | 140.5    | Apr. 23 | 59.2                     | 34.92                          | 168.9    |          |                          |                                |          |
| Sept. 5                | 69.5                     | 29.74                          | 143.9    | Apr. 30 | 59.2                     | 34.89                          | 168.8    | 1935     |                          |                                |          |
| Sept. 11               | 70.6                     | 29.28                          | 141.7    | May 7   | 59.3                     | 34.84                          | 168.6    | Jan. 7   | 59.1                     | 35.00                          | 169.3    |
| Sept. 18               | 65.8                     | 31.41                          | 152.0    | May 14  | 59.5                     | 34.75                          | 168.1    | Jan. 14  | 59.4                     | 34.79                          | 168.3    |
| Sept. 25               | 65.6                     | 31.49                          | 152.3    | May 22  | 59.4                     | 34.82                          | 168.5    | Jan. 21  | 59.6                     | 34.66                          | 167.7    |
| Oct. 2                 | 64.8                     | 31.92                          | 154.4    | May 28  | 59.4                     | 34.79                          | 168.3    | Jan. 28  | 60.5                     | 34.16                          | 165.3    |
| Oct. 9                 | 66.6                     | 31.04                          | 150.1    | June 4  | 59.5                     | 34.75                          | 168.1    | Feb. 4   | 59.7                     | 34.61                          | 167.4    |
| Oct. 16                | 71.8                     | 28.78                          | 139.2    | June 11 | 59.3                     | 34.87                          | 168.7    | Feb. 11  | 59.5                     | 34.74                          | 168.1    |
| Oct. 23                | 69.3                     | 29.83                          | 144.3    | June 18 | 59.4                     | 34.78                          | 168.3    | Feb. 18  | 59.5                     | 34.75                          | 168.1    |
| Oct. 30                | 65.6                     | 31.52                          | 152.5    | June 25 | 59.4                     | 34.77                          | 168.2    | Feb. 25  | 59.2                     | 34.94                          | 169.0    |
| Nov. 6                 | 64.3                     | 32.16                          | 155.8    | July 2  | 59.4                     | 34.79                          | 168.3    | Mar. 4   | 58.6                     | 35.29                          | 170.7    |
| Nov. 13                | 62.3                     | 33.19                          | 160.6    | July 9  | 59.4                     | 34.78                          | 168.3    | Mar. 11  | 58.7                     | 35.22                          | 170.4    |
| Nov. 20                | 61.2                     | 33.78                          | 163.4    | July 16 | 59.5                     | 34.76                          | 168.2    | Mar. 18  | 59.2                     | 34.89                          | 168.8    |
| Nov. 27                | 63.1                     | 32.75                          | 158.4    | July 23 | 59.5                     | 34.76                          | 168.2    | Mar. 25  | 59.5                     | 34.76                          | 168.2    |
|                        |                          |                                |          | July 30 | 59.4                     | 34.77                          | 168.2    |          |                          |                                |          |

<sup>1</sup> Based on the open market price of gold in London, converted at the dollar exchange rate at the "fixing of the gold price" each day at 11 a. m. (London time).

<sup>2</sup> Par.

Bureau of Agricultural Economics. Values are for Monday unless it falls on a holiday, when they are for the next business day.

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